CHAPTER 2
MAINTENANCE

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PERIODIC MAINTENANCE CHART

Periodic Maintenance Overview

Inspection, adjustment and lubrication of important components are explained in the periodic maintenance chart.

Inspect, clean, lubricate, adjust and replace parts as necessary. When inspection reveals the need for replacement parts, use genuine Pure Polaris parts available from your Polaris dealer.

NOTE: Service and adjustments are critical. If you're not familiar with safe service and adjustment procedures, have a qualified dealer perform these operations.

Maintenance intervals in the following chart are based upon average riding conditions and an average vehicle speed of approximately 10 miles per hour. Vehicles subjected to severe use must be inspected and serviced more frequently.

Severe Use Definition

- Frequent immersion in mud, water or sand
- Racing or race-style high RPM use
- Prolonged low speed, heavy load operation
- Extended idle
- Short trip cold weather operation

Pay special attention to the oil level. A rise in oil level during cold weather can indicate contaminants collecting in the oil sump or crankcase. Change oil immediately if the oil level begins to rise. Monitor the oil level, and if it continues to rise, discontinue use and determine the cause or see your dealer.

Break-In Period

The break-in period consists of the first 20 hours of operation. Careful treatment of a new engine and drive components will result in more efficient performance and longer life for these components.

- Drive vehicle slowly at first while varying the throttle position. Do not operate at sustained idle.
- Pull only light loads.
- Perform regular checks on fluid levels and other areas outlined on the daily pre-ride inspection checklist.
- Change both the engine oil and filter after 20 hours or one month.
- See "Owner's Manual" for additional break-in information.

Maintenance Chart Key

The following symbols denote potential items to be aware of during maintenance:

■ = **CAUTION: Due to the nature of these adjustments, it is recommended this service be performed by an authorized Polaris dealer.**

▸ = **SEVERE USE ITEM: See information provided above.**

E = **Emission Control System Service (California).**

NOTE: Inspection may reveal the need for replacement parts. Always use genuine Polaris parts.

⚠ WARNING

Improperly performing the procedures marked ■ could result in component failure and lead to serious injury or death. Have an authorized Polaris dealer perform these services.

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Maintenance Intervals

Item		Maintenance Interval (whichever comes first)			Remarks
		Hours	Calendar	Miles (KM)	
■	Steering	-	Pre-Ride	-	Inspect and make adjustments as needed. See Pre-Ride Checklist later in this chapter.
▶	Front Suspension	-	Pre-Ride	-	
▶	Rear Suspension	-	Pre-Ride	-	
	Tires	-	Pre-Ride	-	
▶	Brake Fluid Level	-	Pre-Ride	-	
▶	Brake Lever Travel	-	Pre-Ride	-	
	Brake System	-	Pre-Ride	-	
	Passenger Seat Mechanism	-	Pre-Ride	-	
	Wheels / Fasteners	-	Pre-Ride	-	
	Frame Fasteners	-	Pre-Ride	-	
▶	Engine Oil Level	-	Pre-Ride	-	
▶ E	Air Filter, Pre-filter	-	Daily	-	Inspect;clean often
	Coolant	-	Daily	-	Check level daily, change coolant every two years
▶	ADC Fluid	-	Daily	-	Check level daily, add as needed
▶	Power Steering Unit (if equipped)	-	Daily	-	Inspect daily, clean often
	Head Lights / Tail Lights	-	Daily	-	Check operation; apply dielectric grease if replacing
▶ E	Air Filter (main element)	-	Weekly	-	Inspect; replace as needed
▶ ■	Brake Pad Wear	10 H	Monthly	100 (160)	Inspect periodically
	Battery	20 H	Monthly	200 (320)	Check terminals; clean; test
▶ E	Engine Oil Change (Break-in Period)	20 H	1 M	-	Perform a break-in oil change at one month or 20 hours, whichever comes first
▶	Front Gearcase Fluid	25 H	Monthly	250 (400)	Inspect level; change demand drive fluid if exposed to extreme use*
▶	Rear Gearcase Fluid	25 H	Monthly	250 (400)	Inspect level
▶	Transmission Fluid	25 H	Monthly	250 (400)	Inspect level

▶ Perform these procedures more often for vehicles subjected to severe use.
E Emission Control System Service (California)
■ Have an authorized Polaris dealer perform these services.

*__Service Note:__ Under extreme use, change demand drive fluid every 25 hours. *"Extreme Use" is defined as constant ADC operation on hilly or mountainous terrain, or if ADC is the primary mode of AWD operation.*

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Item		Maintenance Interval (whichever comes first)			Remarks
		Hours	Calendar	Miles (KM)	
▶	General Lubrication	50 H	3 M	500 (800)	Lubricate all fittings, pivots, cables, etc.
■ E	Throttle Cable / ETC Switch	50 H	6 M	500 (800)	Inspect; adjust; lubricate; replace if necessary
E	Throttle Body Intake Duct	50 H	6 M	500 (800)	Inspect ducts for proper sealing / air leaks
	Drive belt	50 H	6 M	500 (800)	Inspect; replace as needed
	Cooling System	50 H	6 M	500 (800)	Inspect coolant strength seasonally; pressure test system yearly
▶	Radiator	50 H	6 M	500 (800)	Inspect; clean external surfaces
▶	Cooling Hoses	50 H	6 M	500 (800)	Inspect for leaks
▶	Engine Oil Change	100 H	6 M	1000 (1600)	Perform a break-in oil change at 20 hours or after one month of operation; change more frequently during cold weather operation
▶	Oil Filter Change	100 H	6 M	1000 (1600)	Replace with oil change
▶	Front Gearcase Fluid	100 H	12 M	1000 (1600)	Change fluid; also refer to 25 H interval
▶	Rear Gearcase Fluid	100 H	12 M	1000 (1600)	Change fluid
▶	Transmission Fluid	100 H	12 M	1000 (1600)	Change fluid
■ E	Fuel System	100 H	12 M	1000 (1600)	Check for leaks at tank cap, fuel lines, fuel pump; replace lines every two years
▶	Engine Mounts	100 H	12 M	1000 (1600)	Inspect
	Exhaust Pipe / Silencer	100 H	12 M	1000 (1600)	Inspect
■ E	Spark Plug	100 H	12 M	1000 (1600)	Inspect; replace as needed
▶	Wiring	100 H	12 M	1000 (1600)	Inspect for wear, routing, security; apply dielectric grease to connectors subjected to water, mud, etc.
■	Clutches (Drive and Driven)	100 H	12 M	1000 (1600)	Inspect; clean; replace worn parts
■	Front Wheel Bearings	100 H	12 M	1000 (1600)	Inspect; replace as needed
■	Brake Fluid	200 H	24 M	2000 (3200)	Change every two years
■	ADC Fluid	200 H	24 M	2000 (3200)	Change every two years
	Spark Arrestor (if applicable)	300 H	36 M	3000 (4800)	Clean out; or remove clean out plug
■ E	Valve Clearance	1000 H	-	10000 (16000)	Inspect; adjust
■	Toe Adjustment	-			Inspect periodically; adjust as needed
	Headlight Aim	-			Adjust as needed

▶ Perform these procedures more often for vehicles subjected to severe use.
E Emission Control System Service (California)
■ Have an authorized Polaris dealer perform these services.

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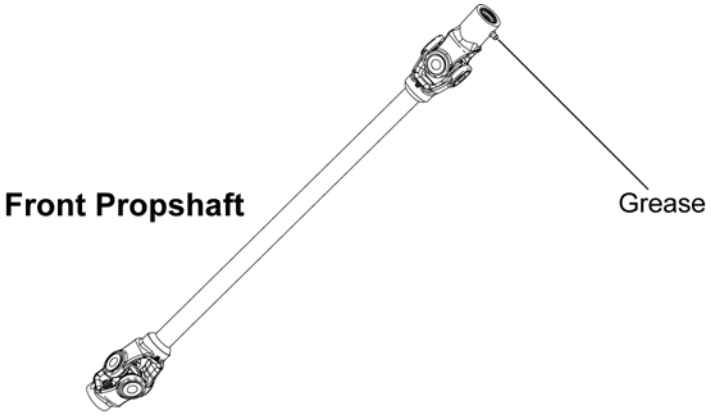
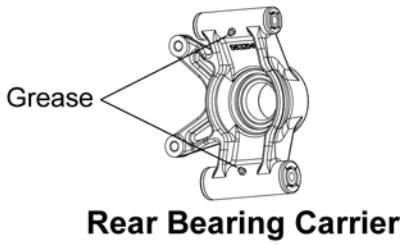
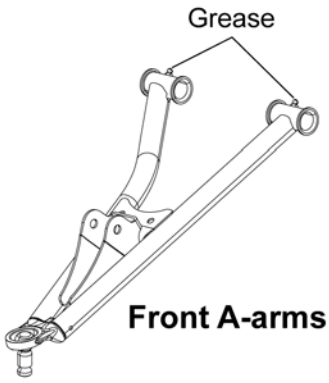
Grease Lubrication Points

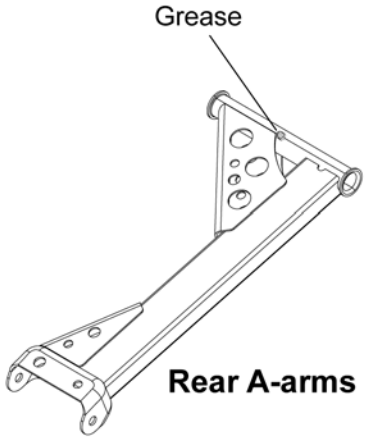
There are grease fittings on each upper and lower front and rear A-arms, each rear bearing carrier, and on the front propshaft yoke. Apply grease until all traces of water have been purged out at each of these areas.

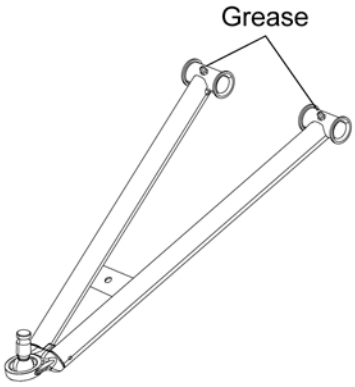
Item	Recommended Lube	Method	Frequency
Front Propshaft Yoke	Polaris Premium U-Joint Grease	Grease fittings every 500 miles (800 km).	Grease before long periods of storage, and after thoroughly washing or submerging the ATV.
Front & Rear A-Arms			
Rear Bearing Carrier			

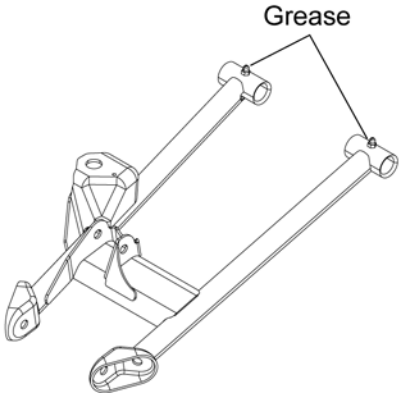












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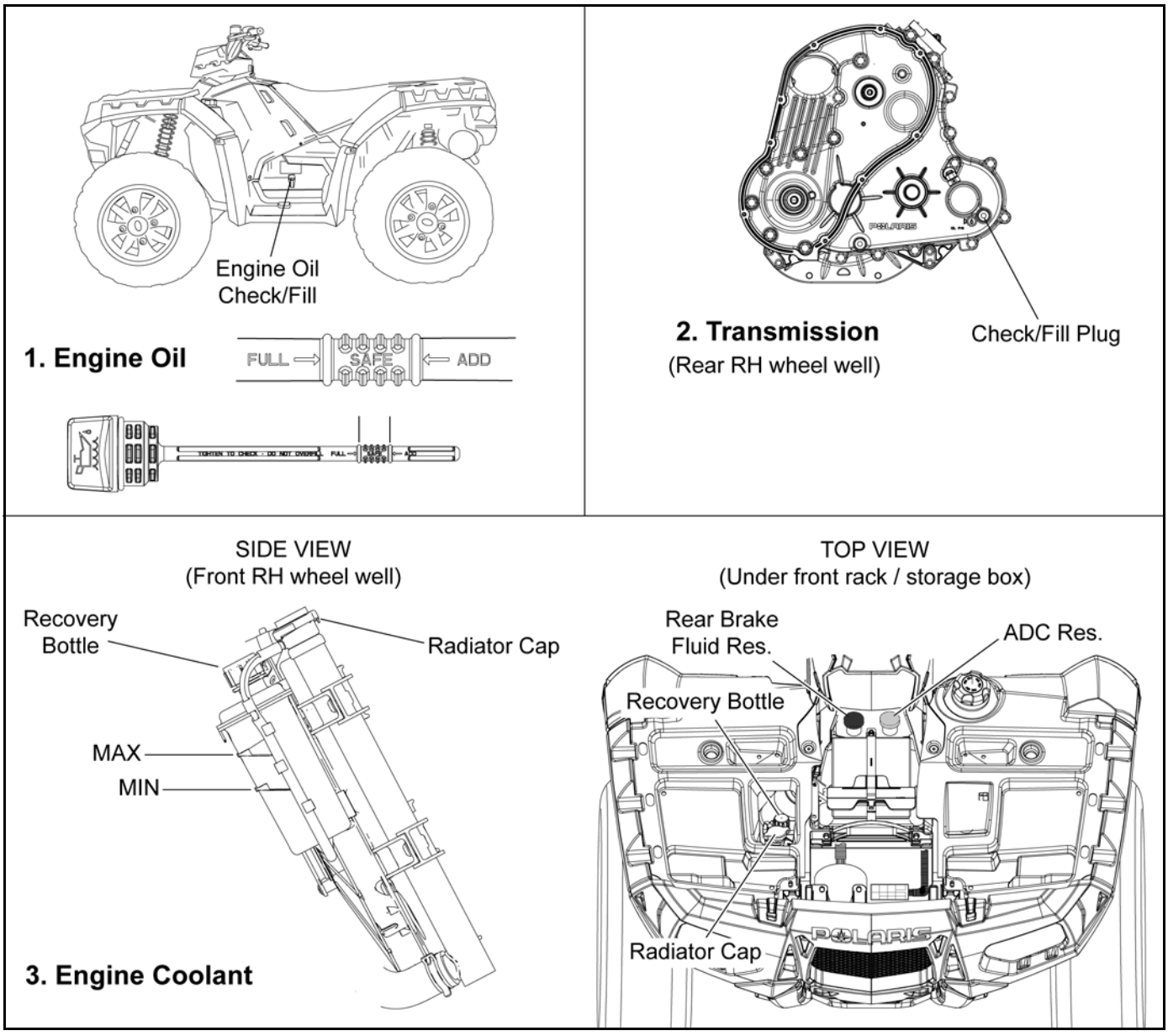
Maintenance Quick Reference

Ill. #	Item	Lube Rec.	Method	Frequency*
1	Engine Oil	Polaris PS-4 Plus Synthetic Engine Oil	Add oil to proper level on dipstick	Change after 1st month or first 20 hours of operation, 100 hours thereafter; Change more often (25 hours) in severe duty conditions or short trip cold weather operation
2	Transmission	Polaris AGL Plus Gearcase Lubricant	Add fluid until it is visible at the fill hole threads	Check level every 25 hours; change fluid yearly
3	Engine Coolant	Polaris 60/40 Coolant	Maintain coolant level in coolant reservoir bottle.	Check level daily, change coolant every 2 years

* More often under severe use, such as operated in water or under severe loads.



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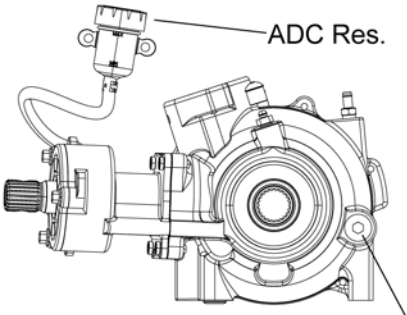
Maintenance Quick Reference, Continued.....

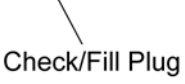
Ill. #	Item	Lube Rec.	Method	Frequency*
4	Front Gearcase ADC Reservoir	Polaris Demand Drive Plus	Maintain fluid level in ADC Reservoir to indicated level	Check level daily; change fluid every two years or 2000 miles
5	Front Gearcase	Polaris Demand Drive Plus	Add fluid until it is visible at the fill hole threads	Check level every 25 hours; change according to intervals
6	Rear Gearcase	Polaris ATV Angle Drive Fluid (ADF)	Add fluid until it is visible at the fill hole threads	Check level every 25 hours; change fluid yearly
7	Brake Fluid	Polaris DOT 4 Brake Fluid	Maintain fluid level in both master cylinder reservoirs to indicated levels	Check level during pre-ride inspection; change fluid every two years

***** More often under severe use, such as operated in water or under severe loads.

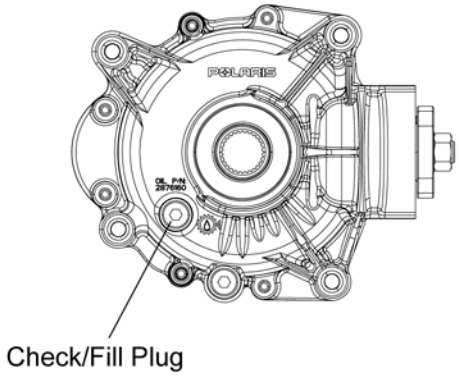
4. ADC Reservoir
(see "TOP VIEW" on previous page)



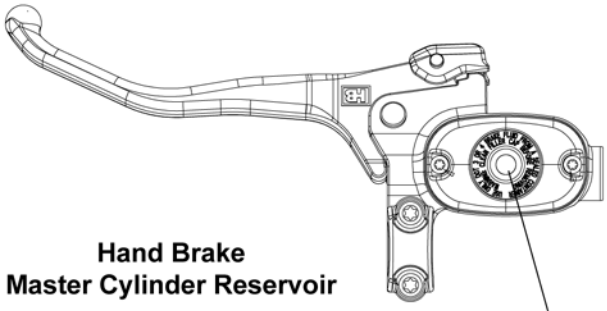
5. Front Gearcase
(Front RH wheel well)

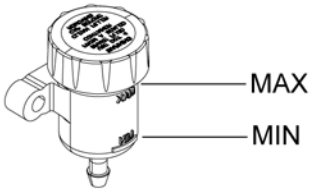


6. Rear Gearcase
(Rear RH wheel well)



7. Brake Fluid





Foot Brake
Master Cylinder Reservoir
(see "TOP VIEW" on previous page)

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LUBRICANTS / SERVICE PRODUCTS

Polaris Lubricants,Maintenance and Service Products

Part No.	Description
Engine / Transmission Lubricant	
2870791	Fogging Oil (12 oz. Aerosol)
2876244	PS-4 Plus Synthetic 4-Cycle Engine Oil (Quart) (12 count)
2876245	PS-4 Plus Synthetic 4-Cycle Engine Oil (Gallon) (4 count)
Gearcase Lubricants	
2877922	Demand Drive Plus (Quart)
2877923	Demand Drive Plus (2.5 Gallon)
2878068	AGL Plus Gearcase Lubricant (1 Qt.) (12 Count)
2878069	AGL Plus Gearcase Lubricant (1 Gal.) (4 Count)
2878070	AGL Plus Gearcase Lubricant (2.5 Gal.) (2 Count)
2876160	ATV Angle Drive Fluid (Quart) (12 count)
2872276	ATV Angle Drive Fluid (2.5 Gallon) (2 count)
2870465	Pump for Gallon Jug
Coolant	
2871534	60/40 Coolant (Quart) (12 count)
2871323	60/40 Coolant (Gallon) (6 count)
Grease / Specialized Lubricants	
2871312	Grease Gun Kit
2871322	Premium All Season Grease (3 oz. cartridge) (24 count)
2871423	Premium All Season Grease (14 oz. cartridge) (10 count)
2871460	Starter Drive Grease (12 count)
2871515	Premium U-Joint Lube (3 oz.) (24 count)
2871551	Premium U-Joint Lube (14 oz.) (10 count)
2871329	Dielectric Grease (Nyogel™)

NOTE: Each item can be purchased separately at your local Polaris dealer.

Additives / Sealants / Thread Locking Agents / Misc.	
2871950	Loctite™ Threadlock 242 (6 ml.) (12 count)
2871326	Premium Carbon Clean (12 oz.) (12 count)
2870652	Fuel Stabilizer (16 oz.) (12 count)
2872189	DOT 4 Brake Fluid (12 count)
2871557	Crankcase Sealant, 3-Bond 1215 (5 oz.)
2871950	Loctite™ Threadlock 242 (6 ml.) (12 count)
2871326	Premium Carbon Clean (12 oz.) (12 count)
2870652	Fuel Stabilizer (16 oz.) (12 count)
2872189	DOT 4 Brake Fluid (12 count)
2871557	Crankcase Sealant, 3-Bond 1215 (5 oz.)

NOTE: The number count indicated by each part number in the table above indicates the number of units that are shipped with each order.

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GENERAL VEHICLE INSPECTION AND MAINTENANCE

Pre-ride / Daily Inspection

Perform the following pre-ride inspection daily, and when servicing the vehicle at each scheduled maintenance.

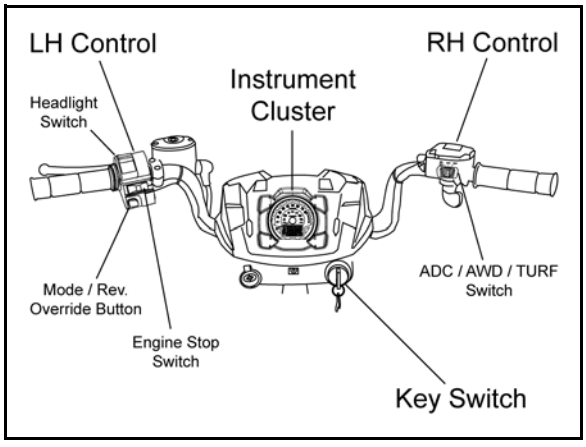
- Tires - check condition and tire pressure
- Fuel and oil - fill both to proper level; do not overfill
- All brakes - check operation (includes auxiliary brake)
- Throttle - check for free operation
- Headlight / Taillight / Brakelight - check operation of all indicator lights and switches
- Engine stop switch (key switch) - check for proper function
- Wheels - check for loose wheel nuts; push and pull on the top of the wheel to feel for play in the suspension
- Air cleaner element - check for dirt or water; clean or replace
- Steering - check for free operation, noting any unusual looseness in any area
- Loose parts - visually inspect vehicle for any damaged or loose nuts, bolts or other fasteners
- Engine coolant - check for proper level at the recovery bottle
- Ensure passenger seat mechanism functions properly (if equipped)

Frame, Nuts, Bolts, Fasteners

Periodically inspect the torque of all fasteners in accordance with the maintenance schedule. Check that all cotter pins are in place. Refer to specific fastener torques listed in each chapter.

Controls

Check handlebar controls for proper operation, positioning and adjustment.



FUEL SYSTEM AND AIR INTAKE

Fuel System

⚠ WARNING

Gasoline is extremely flammable and explosive under certain conditions.

- Always stop the engine and refuel outdoors or in a well ventilated area.
- Do not smoke or allow open flames or sparks in or near the area where refueling is performed or where gasoline is stored.
- Do not overfill the tank. Do not fill the tank neck.
- If you get gasoline in your eyes or if you swallow gasoline, seek medical attention immediately.
- If you spill gasoline on your skin or clothing, immediately wash it off with soap and water and change clothing.
- Never start the engine or let it run in an enclosed area. Engine exhaust fumes are poisonous and can result in loss of consciousness or death in a short time.
- Never drain the fuel when the engine is hot. Severe burns may result.

Fuel Lines

1. Check fuel lines for signs of wear, deterioration, damage, or leakage. Replace if necessary.
2. Be sure fuel lines are routed properly and secured with cable ties where applicable.

⚠ CAUTION

Make sure lines are not kinked or pinched

3. Replace all fuel lines every two years.

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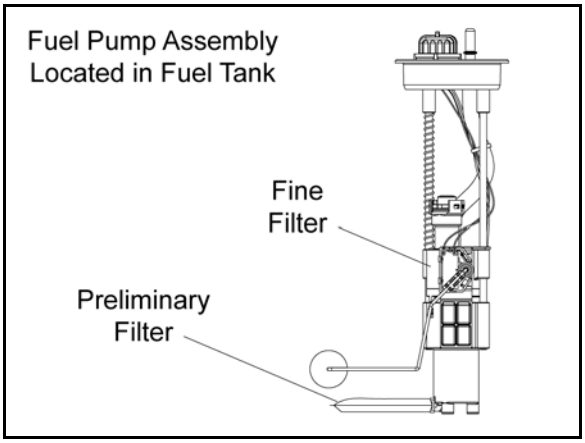
Fuel Filters

The Sportsman 850 uses a serviceable high-volume, high-pressure fuel pump that includes a preliminary filter and an internal fine filter located before the pump regulator. If the fuel pump filters require service, the fuel pump must be replaced as an assembly.



NOTE: Refer to Chapter 3 for fuel pump replacement and all other information related to the EFI System.

Vent Line

1. Check the vent line from the fuel tank for signs of wear, deterioration, damage or leakage. Replace the line every two years.
2. Verify vent line is routed properly and secured with an appropriate number of cable ties.

⚠ CAUTION

Make sure lines are not kinked or pinched

Throttle Operation

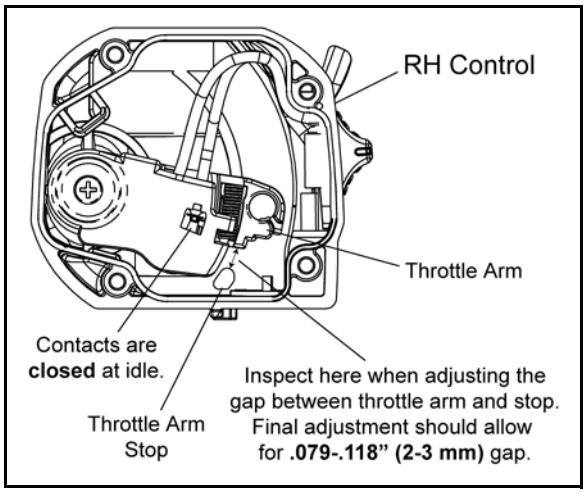
Check for smooth throttle opening and closing in all handlebar positions. Throttle lever operation should be smooth and lever must return freely without binding.

1. Place the gear selector in neutral.
2. Set parking brake.
3. Start the engine and let it idle.
4. Turn handlebars from full right to full left. If idle speed increases at any point in the turning range, inspect throttle cable routing and condition. If cable is routed properly and in good condition, no adjustment is required.
5. Replace the throttle cable if worn, kinked, or damaged.

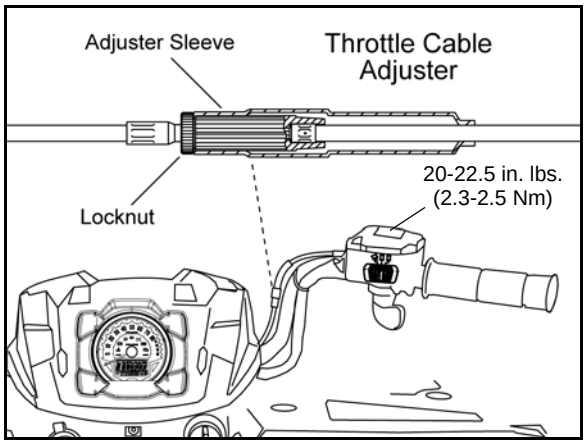
Electronic Throttle Control Switch (ETC) / Throttle Cable Adjustment

1. Turn the ignition key to the “OFF” position.
2. Slide the boot back far enough to expose the inline cable adjuster sleeve and loosen the adjuster locknut.
3. Remove the (4) screws and cover from the RH control.
4. With handlebars centered and wheels pointing forward, slowly turn the adjuster sleeve counter-clockwise (out) just until the gap is removed between the throttle arm and the throttle arm stop (see illustration below).

NOTE: While moving the adjuster sleeve, “flip” the throttle lever slightly to remove slack in the cable.



5. Turn the cable adjuster sleeve clockwise (in) 1.5 - 2 turns; tighten locknut and reinstall boot. After this adjustment there should be .079-.118” (2-3 mm) gap between throttle arm and throttle arm stop.



6. Reinstall the RH control cover and ensure the O-ring is properly in place. Securely tighten the (4) screws.
7. Place the vehicle in PARK and start the engine. Turn the handlebars from full left to full right while listening for any change in engine speed. If engine speed changes, loosen the locknut and turn the adjuster sleeve clockwise (in) an additional 1/2 turn and repeat this step.

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Air Filter / Pre-Filter Service

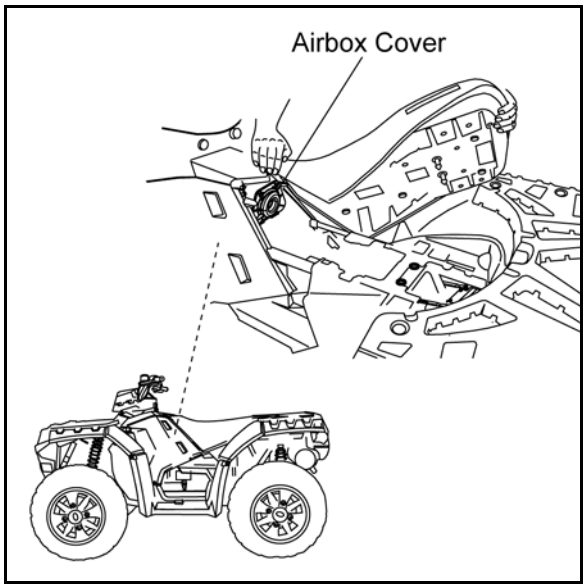
It is advisable to replace the filter when it is dirty. However, in an emergency, it is permissible to clean the main filter if you observe the following practices.

- Never immerse the filter in water since dirt can be transferred to the clean air side of the filter.
- If compressed air is used never exceed a pressure of 40 PSI. Always use a dispersion type nozzle to prevent filter damage and clean from the inside to the outside.

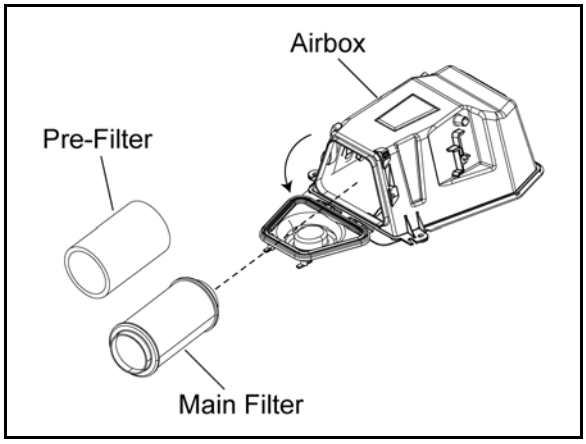
It is recommended that the air filter and pre filter be replaced annually. When riding in extremely dusty conditions, replacement is required more often.

Removal:

1. Remove the seat to access the airbox cover.



2. Unscrew the two knobs or remove the rubber strap retaining the airbox cover and open the cover.



3. Remove the air filter assembly from the airbox.

Cleaning:

4. Slip the pre-filter screen off of main element. Clean the pre-filter with hot soapy water.
5. Rinse and dry thoroughly.
6. Inspect pre-filter screen for tears or damage.
7. Inspect main filter and replace if necessary. If the filter has been soaked with fuel or oil it must be replaced.

Installation:

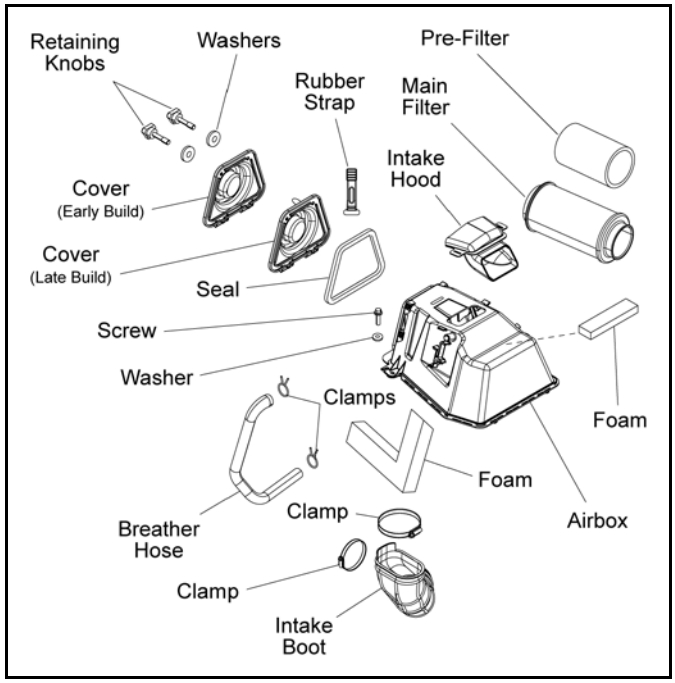
8. Inspect airbox cover seal for damage. It should adhere tightly to the cover and seal all the way around. Replace seal as needed.
9. Reinstall pre-filter screen over main filter. Be sure the screen covers entire surface of main filter without folds, creases, or gaps.

NOTE: Apply a small amount of general purpose grease to the sealing edges of the filter before reinstalling.

10. Install air filter assembly into the airbox and position it correctly before closing the airbox cover.

NOTE: Proper placement of the air filter is important to prevent air leaks.

11. Close airbox cover and secure cover by tightening the retaining knobs or installing the rubber strap.
12. Check the intake boot for cracks, deterioration, abrasion, or leaks. Replace as needed.



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ENGINE

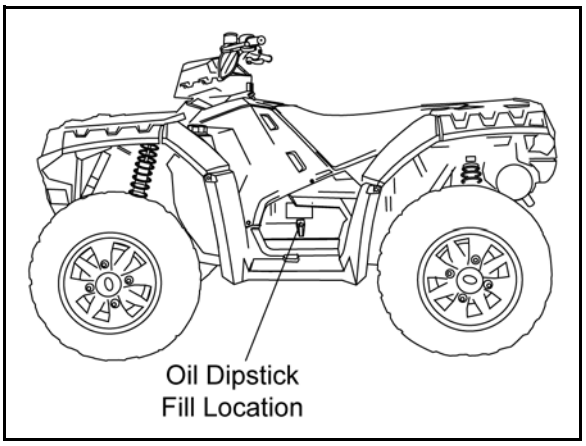
Engine Oil Level

Polaris recommends the use of Polaris PS-4 Plus synthetic engine oil. Always use PS-4 Plus engine oil. Oil may need to be changed more frequently if Polaris engine oil is not used.

CAUTION

Mixing brands or using a non-recommended engine oil may cause serious engine damage. Always use the recommended engine oil. Never substitute or mix engine oil brands.

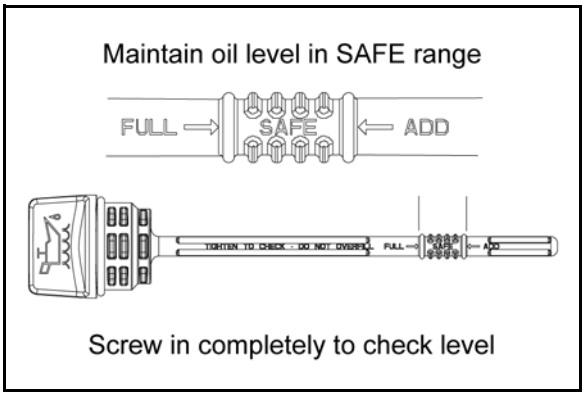
1. Locate the engine oil dipstick on the left side of the ATV.



2. Position the ATV on a level surface.
3. Stop engine and remove the dipstick. Wipe it dry with a clean cloth.
4. Reinstall and tighten the dipstick.

NOTE: The dipstick must be screwed in completely to ensure an accurate measurement.

5. Remove the dipstick and check the oil level.

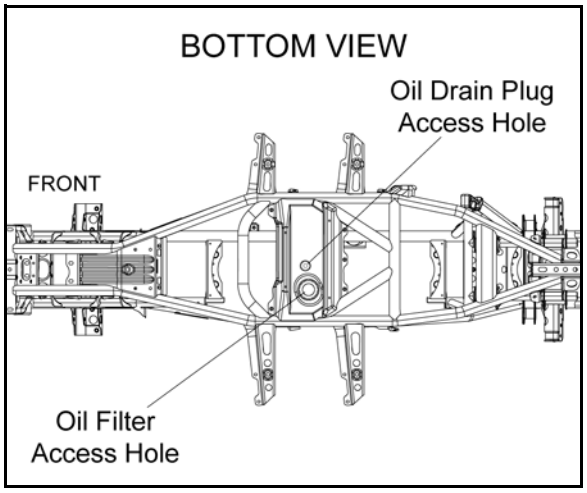


6. Maintain the oil level in the safe range. Do not overfill.

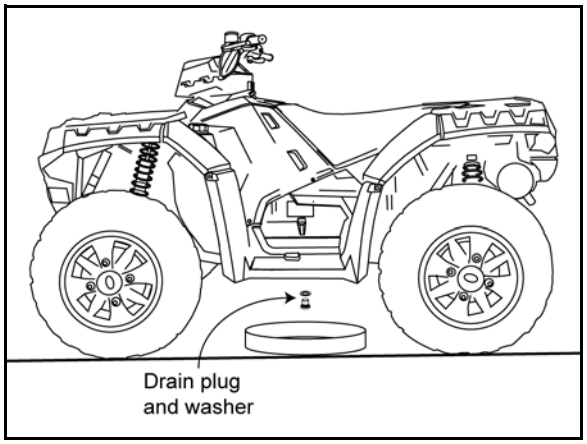
Engine Oil and Filter Change

Always change engine oil and filter at the intervals outlined in the Periodic Maintenance Chart. Always change the oil filter whenever changing the engine oil.

1. Position the ATV on a level surface.
2. Place the transmission in park.
3. Start engine and allow it to run for two to three minutes until the engine is warm.
4. Stop the engine.
5. Clean the area around the drain plug.



6. Place a drain pan beneath the engine crankcase.
7. Using a 6 mm Hex socket, remove the drain plug and allow the engine oil to drain completely.



⚠ WARNING

Hot oil can cause serious burns to skin. Do not allow hot oil to contact skin.

8. Replace the sealing washer on the drain plug.

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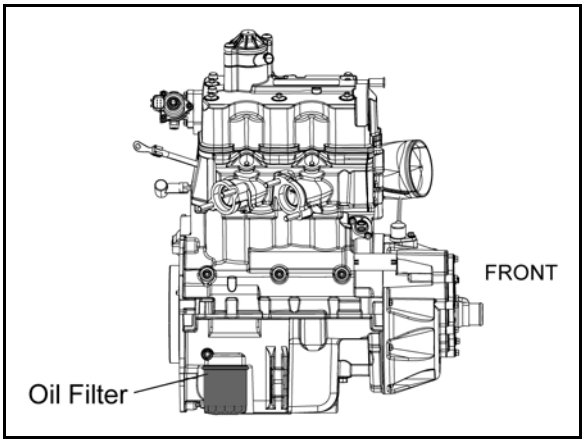
NOTE: The sealing surfaces on the drain plug and crankcase should be clean and free of burrs, nicks or scratches.

9. Reinstall drain plug and torque to **12 ft. lbs. (16 Nm)**.

= T
Engine Drain Plug: **12 ft. lbs. (16 Nm)**

10. Locate oil filter through access hole in the skid plate. Place shop towels beneath the oil filter. Using oil filter wrench **(PU-50105)** turn oil filter counterclockwise to remove it.



11. Use a clean dry towel to clean the filter sealing surface on the crankcase.
12. Check to make sure the O-ring on the new oil filter is in good condition. Lubricate O-ring on new filter with a film of fresh engine oil.
13. Install new oil filter and turn by hand until filter gasket contacts the sealing surface, then turn it an additional 1/2 turn.

= T
Oil Filter Torque: Turn by hand until filter gasket contacts sealing surface, then turn an additional 1/2 turn.

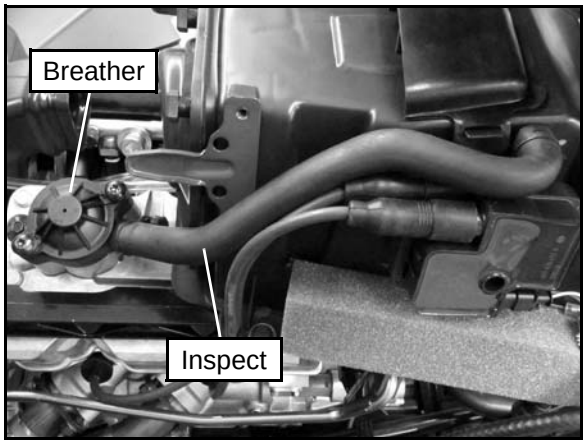
14. Remove dipstick and fill engine with 2 qts. (1.9 l) of the recommended engine oil.

=
Recommended Engine Oil: PS-4 Plus Synthetic 4-Cycle Engine Oil (PN 2876244) (Quart)

15. Start the engine and allow it to idle for one to two minutes.
16. Stop the engine and check for leaks.
17. Re-check the oil level on the dipstick and add oil as necessary to bring the level to the upper mark on the dipstick.
18. Dispose of used oil and filter properly.

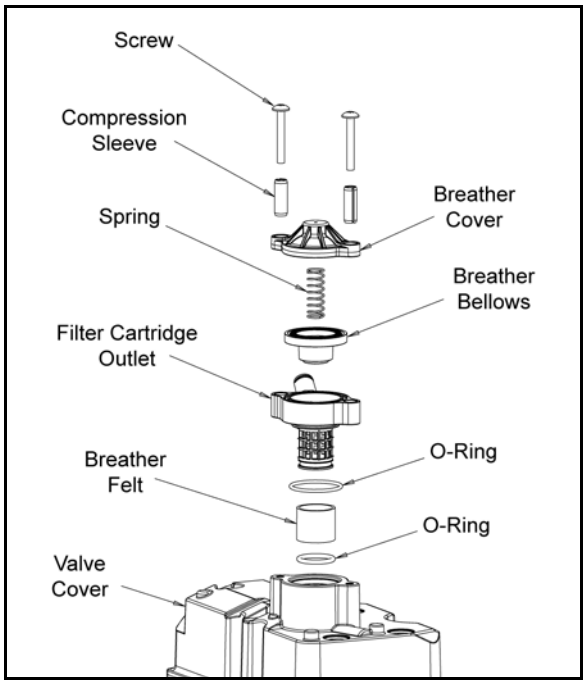
Engine Breather Hose

Be sure the engine breather hose is routed properly and secured in place. **CAUTION:** Make sure line is not kinked or pinched.



Engine Breather Assembly

The engine breather assembly is located on top of the valve cover. Inspect and service the breather components as required.



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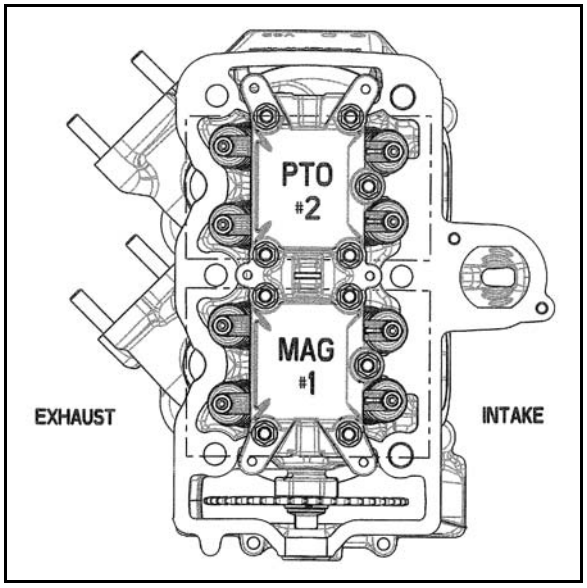
Valve Clearance Adjustment

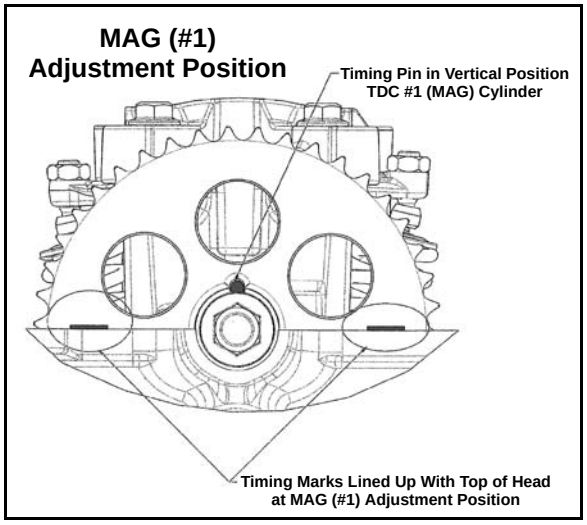
1. Remove the seat and both upper side panels.
2. Disconnect the shift linkage from the shift lever.
3. Remove the (2) screws retaining the lower portion of the air box.
4. Remove the hose from the breaker valve located on top of the valve cover.
5. Remove the push rivets retaining the right-hand portion of the rear cab to gain access to the bolts retaining the upper right-hand frame support.
6. Remove the (4) bolts retaining the frame support. Pull the support forward and down to remove it from the vehicle.
7. Remove the (2) Torx-head screws retaining the upper portion of the air box to the front cab.
8. Carefully disconnect the ECU by pulling the tab out while pulling down on the connector.
9. Loosen the hose clamp retaining the intake boot to the intake plenum and remove the boot.
10. Lift up on the air box and turn it sideways to gain access to the valve cover bolts.
11. Remove the spark plug wires and spark plugs.
12. Remove the (6) valve cover bolts and valve cover.

13. Remove PVT cover so the engine can be rotated (see "Drive Belt Removal" procedure within this chapter).

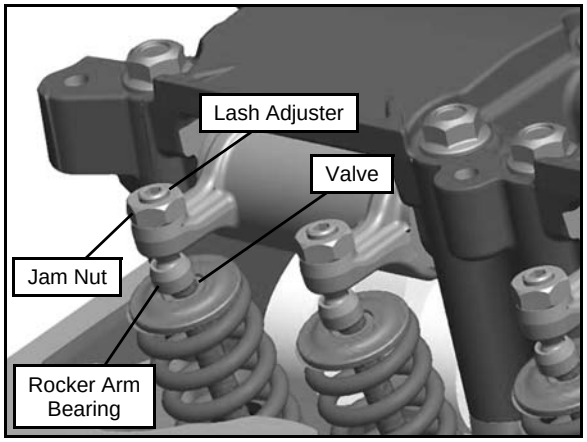
MAG & PTO ADJUSTMENT PROCEDURE



14. Turn the drive clutch counter-clockwise until the cam sprocket is in the **MAG (#1) Adjustment Position**.


MAG (#1)
Adjustment Position
Timing Pin in Vertical Position
TDC #1 (MAG) Cylinder
Timing Marks Lined Up With Top of Head
at MAG (#1) Adjustment Position

15. Loosen the jam nut and turn the lash adjuster in until the rocker arm bearing lightly touches the valve.



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= In. / mm.

Intake / Exhaust Valve Clearance:
.000 in. (.00 mm)

16. Hold the lash adjuster and torque the jam nut using a torque wrench with a 10 mm crow's foot adaptor. Torque the rocker jam nut to specification.

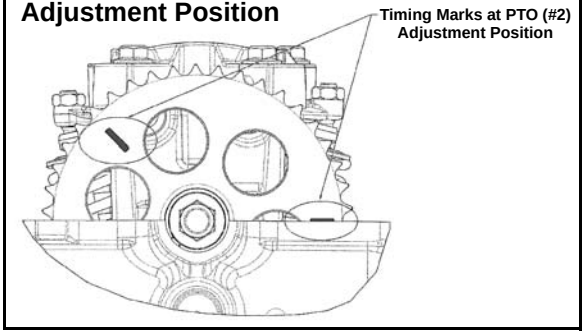
= T

Rocker Jam Nut: **71-89 in. lbs. (8-10 Nm)**

17. After tightening the jam nut, turn the rocker arm bearing with your fingers to ensure valve lash is not set too tight.

IMPORTANT: If rocker arm bearing does not turn after setting the valve lash, the adjustment is too tight and will need to be performed again (see Step 15).

18. Turn the drive clutch counter-clockwise to rotate the cam sprocket **225°** to the **PTO (#2) Adjustment Position**.



19. Repeat steps 15-17.
20. Clean sealing surfaces of the cylinder head and valve cover.
21. Inspect the condition of the valve cover bolt rubber isolators. If rubber has become hardened or cracked, replace them.
22. Install a new valve cover seal and install the valve cover. Torque the cover bolts to specification.

= T

Valve Cover Bolts:
89 in. lbs. (10 Nm)

23. Install the upper right-hand frame support and torque the (4) mounting bolts to specification.

= T

Upper Right-Hand Frame Support Bolts:
36 ft. lbs. (49 Nm)

24. Reassemble vehicle by reversing this procedure. Start the engine to ensure proper valve adjustment was performed.

Compression and Leakdown Tests

NOTE: This engine does NOT have decompression components. Compression readings will vary in proportion to cranking speed during the test.

Smooth idle generally indicates good compression. Low engine compression is rarely a factor in running condition problems above idle speed. Abnormally high compression can be caused by worn or damaged exhaust cam lobes.

A cylinder leak-down test is the best indication of engine condition. Follow tester manufacturer's instructions to perform a cylinder leak-down test. (Never use high pressure leakage testers as crankshaft seals may dislodge and leak).

Measured Cylinder Compression
210-250 psi (full throttle)

Cylinder Leakage Service Limit: 10%
(Inspect for cause if leakage exceeds 10%)

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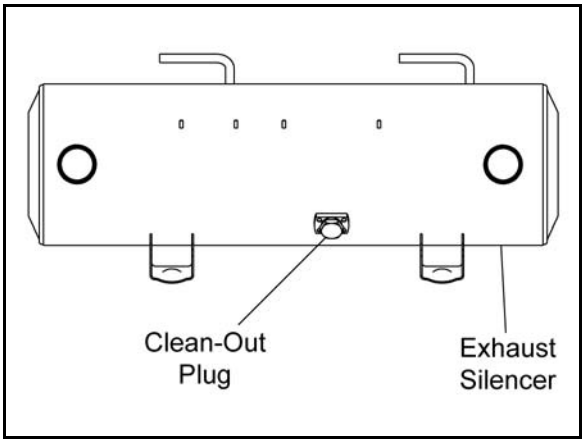
Exhaust Silencer Cleaning

WARNING

Do not perform clean out immediately after the engine has been run, as the exhaust system becomes very hot. Serious burns could result from contact with exhaust components.
To reduce fire hazard, make sure that there are no combustible materials in the area when purging the exhaust silencer.
Wear eye protection.
Do not stand behind or in front of the vehicle while purging the carbon from the silencer.
Never run the engine in an enclosed area. Exhaust contains poisonous carbon monoxide.
Do not go under the machine while it is inclined. Set the hand brake and block the wheels to prevent roll back.
Failure to heed these warnings could result in serious personal injury or death.

The exhaust silencer must be periodically purged of accumulated carbon as follows:

1. Remove the clean out plug on the bottom of the silencer.

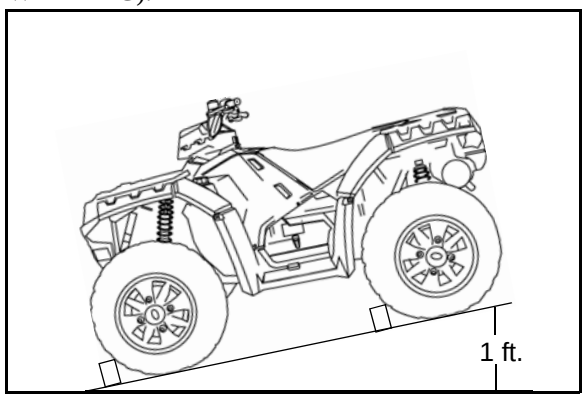


2. Place the transmission in park, and start the engine.
3. Purge accumulated carbon from the exhaust system by momentarily revving the engine several times.
4. If some carbon is expelled, cover the exhaust outlets and lightly tap on the silencer around the clean out plug with a rubber mallet while revving the engine several more times.

CAUTION

Wear protective gloves when covering the exhaust outlets. Serious burns could result from contact with exhaust components.

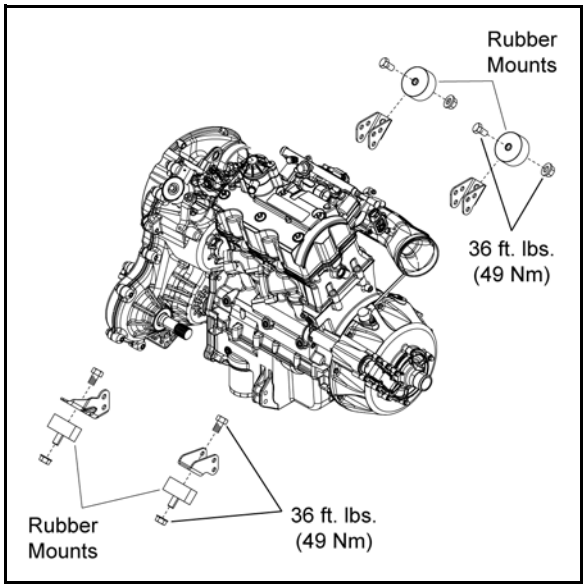
5. If particles are still suspected to be in the silencer, back the machine onto an incline so the rear of the machine is 1 ft. (30.5 cm) higher than the front. Place the transmission in park and block the wheels. Repeat steps 3 and 4 (see WARNING).



6. If particles are still suspected to be in the silencer, drive the machine onto the incline so the front of the machine is 1 ft. (30.5 cm) higher than the rear. Place the transmission in park and block the wheels. Repeat Steps 3 and 4 (see WARNING).
7. Stop the engine and allow the silencer to cool. Reinstall the clean out plug.

Engine Mount Fastener Torque

Check engine mounting fasteners and ensure they are tight. Also inspect the condition of the rubber mounts. If rubber mounts are cracked or show signs of fatigue, replace them.



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TRANSMISSION AND GEARCASES

Transmission Lubrication

NOTE: It is important to follow the transmission maintenance intervals described in the Periodic Maintenance Chart. Regular lubricant level inspections should be performed as well.

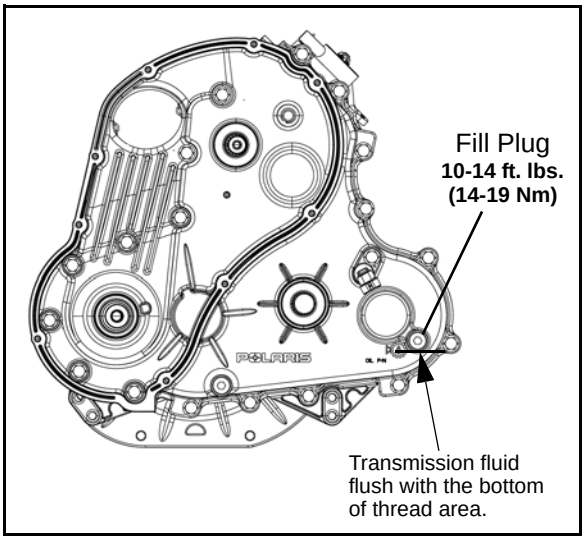
The transmission lubricant level should be checked and changed in accordance with the maintenance schedule.

- Be sure vehicle is positioned on a level surface when checking or changing the lubricant.
- Check vent hose to be sure it is routed properly and unobstructed.

Transmission Lubricant Level Check

The fill plug is located on the right-hand side of the transmission. Access the fill plug through the rear right-hand wheel well. Maintain the lubricant level even with the bottom threads of the fill plug hole.

1. Position vehicle on a level surface.
2. Remove the fill plug and check the lubricant level.



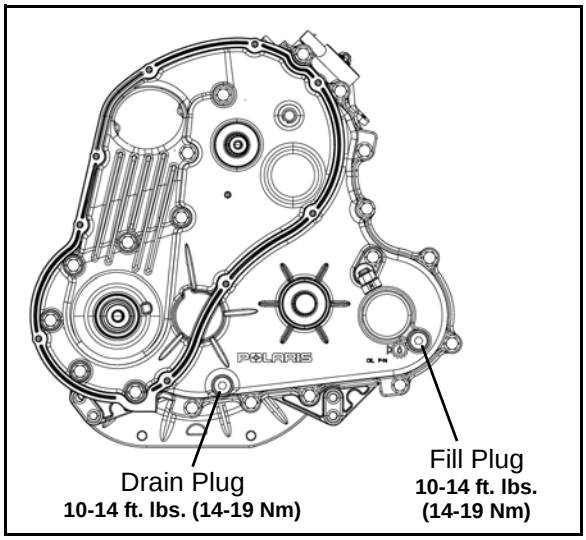
3. If lubricant level is not even with the bottom threads, add the recommended lubricant as needed. Do not overfill.
4. Reinstall the fill plug and torque to specification.

= T
Drain/Fill Plug Torque: **10-14 ft. lbs. (14-19 Nm)**

Transmission Lubricant Change

Access the drain plug through the rear right-hand wheel well. The plastic skid plate can be removed for better access to the drain plug.

1. Remove the fill plug (refer to "Transmission Lubricant Level Check").
2. Place a drain pan under the transmission drain plug.
3. Remove drain plug and allow lubricant to drain completely.



4. Clean the drain plug magnetic surface.
5. Reinstall drain plug with a new O-ring and torque to specification.
6. Add the recommended amount of lubricant through the fill plug hole. Maintain the lubricant level at the bottom of the fill plug hole when filling the transmission. Do not overfill.

=
Recommended Transmission Lubricant: AGL Plus Gearcase Lubricant (PN 2878068) (Quart) **Capacity:** 37 oz. (1100 ml)

7. Reinstall fill plug with a new O-ring and torque to specification.

= T
Drain/Fill Plug Torque: **10-14 ft. lbs. (14-19 Nm)**

8. Check for leaks. Dispose of used lubricant properly.

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Front Gearcase Lubrication

NOTE: It is important to follow the front gearcase maintenance intervals described in the Periodic Maintenance Chart. Regular fluid level inspections should be performed as well.

SERVICE NOTE: Under extreme use, change fluid every 25 hours. "*Extreme Use" is defined as constant ADC operation on hilly or mountainous terrain, or if ADC is the primary mode of AWD operation.*

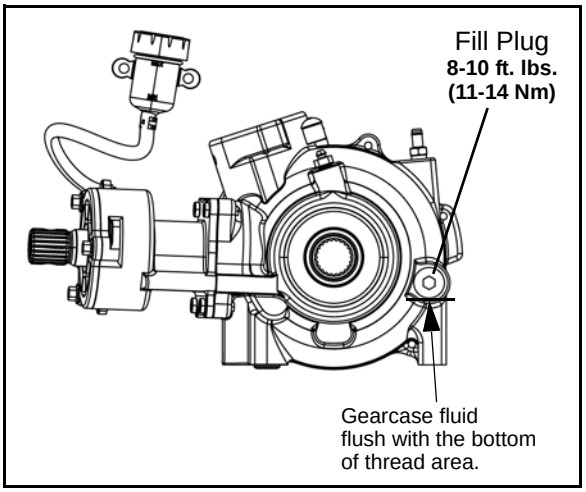
The front gearcase fluid level should be checked and changed in accordance with the maintenance schedule.

- Be sure vehicle is positioned on a level surface when checking or changing the fluid.
- Check vent hose to be sure it is routed properly and unobstructed.

Front Gearcase Fluid Level Check

The fill plug is located on the right side of the front gearcase. Access the fill plug through the front right-hand wheel well or through the front lower bumper. Maintain the fluid level even with the bottom threads of the fill plug hole.

1. Position vehicle on a level surface.
2. Remove the fill plug and check the fluid level.



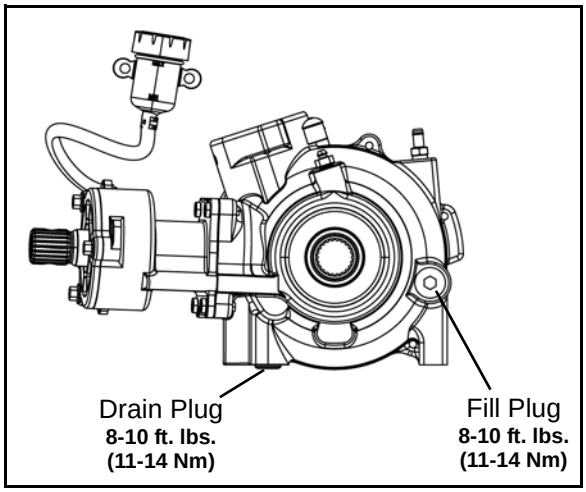
3. If fluid level is not even with the bottom threads, add the recommended fluid as needed. Do not overfill.
4. Reinstall the fill plug and torque to specification.

= T
Drain / Fill Plug Torque: **8-10 ft. lbs. (11-14 Nm)**

Front Gearcase Fluid Change:

The drain plug is located on the bottom side of the front gearcase. Access the drain plug through the access hole in the front skid plate.

1. Remove the fill plug (refer to "Front Gearcase Fluid Level Check").
2. Place a drain pan under the front gearcase drain plug.
3. Remove the drain plug and allow fluid to drain completely.



4. Clean the drain plug magnetic surface.
5. Reinstall drain plug with a new O-ring and torque to specification.
6. Add the recommended amount of fluid through the fill hole. Maintain the fluid level even with the bottom threads of the fill plug hole.

=
Recommended Front Gearcase Fluid: Polaris Demand Drive Plus (PN 2877922) (Quart) **Capacity:** 9.3 oz. (275 ml)

7. Reinstall fill plug with a new O-ring and torque to specification.

= T
Drain / Fill Plug Torque: **8-10 ft. lbs. (11-14 Nm)**

8. Check for leaks. Dispose of used fluid properly.

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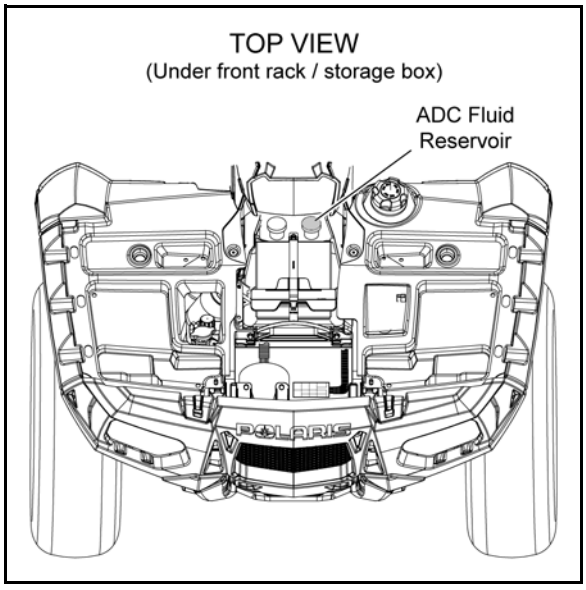
Front Gearcase ADC Fluid

NOTE: It is important to follow the front gearcase maintenance intervals described in the Periodic Maintenance Chart. Regular fluid level inspections should be performed as well.

Front Gearcase ADC Fluid Level Check

The ADC fluid reservoir is located underneath the front rack as shown below. Maintain the fluid level between the "MIN" and "MAX" levels indicated on the reservoir.

1. Disengage the anchors and remove front rack assembly.
2. Check the fluid level of the ADC reservoir.



3. If fluid level is below the minimum mark on the reservoir, remove the cap and add the recommended fluid.
4. Reinstall the cap and front rack assembly.

Front Gearcase ADC Fluid Change:

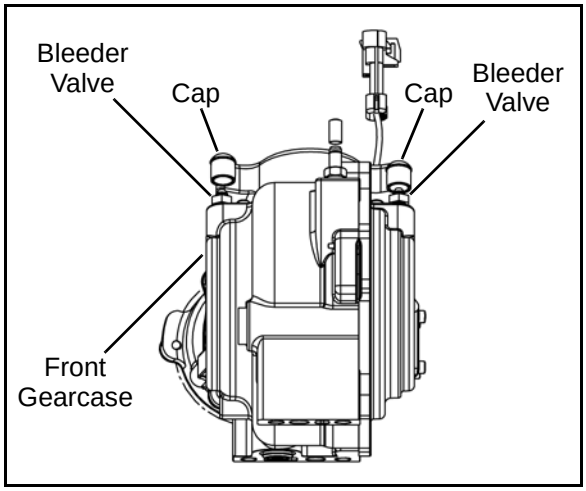
1. Position the vehicle on a level surface and allow the vehicle to sit for at least 30 minutes.
2. Thoroughly clean the areas around the ADC reservoir and bleeder valves.
3. Remove the reservoir cap and diaphragm assembly.
4. Make sure the fluid inside the reservoir is free of debris. If any debris is found, use a clean shop towel or suction device to remove it from the reservoir.

NOTE: Debris in the reservoir may result in inadequate bleeding and reduced performance of the system.

5. Begin the bleeding process by filling reservoir to the "MAX" level with clean Polaris Demand Drive Plus.

=
Recommended ADC Fluid: Polaris Demand Drive Plus (PN 2877922) (Quart)

6. Locate bleeder valves found on each side of the front gearcase and remove the protective caps.



7. Attach a clean clear hose to one of the bleeder valves.
8. Slowly loosen the valve (counter-clockwise) and allow fluid and trapped air to flow from the fitting.

IMPORTANT: Do not allow ADC fluid in reservoir to drop below the "MIN" fill line. Close bleeder valve before the fluid level drops below the "MIN" fill line. Refilling an empty reservoir will result in air pockets becoming trapped.

9. Close the valve when clean (bubble-free) fluid begins to flow from the valve.
10. Repeat steps 7-9 on the remaining bleeder valve.
11. Torque the bleeder valves to specification and reinstall the protective caps.

= **T**
Bleeder Valve Torque: **80 in. lbs. (9 Nm)**

12. Fill reservoir to a level midway between "MAX" and "MIN" fill lines. Verify no debris is found in reservoir fluid.
13. Install the reservoir cap and diaphragm securely and wipe clean any fluid residue.

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Rear Gearcase Lubrication

NOTE: It is important to follow the rear gearcase maintenance intervals described in the Periodic Maintenance Chart. Regular fluid level inspections should be performed as well.

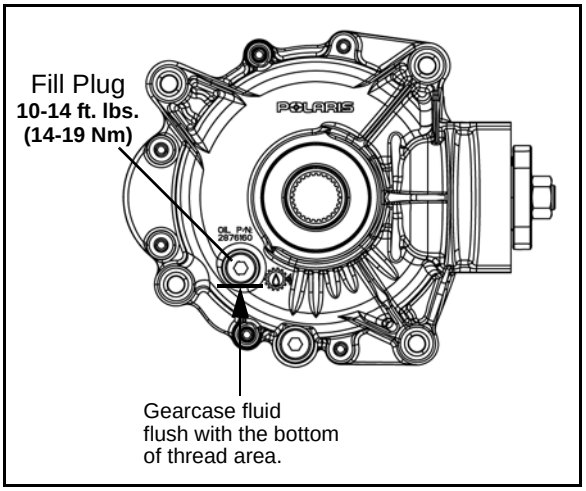
The rear gearcase fluid level should be checked and changed in accordance with the maintenance schedule.

- Be sure vehicle is positioned on a level surface when checking or changing the fluid.
- Check vent hose to be sure it is routed properly and unobstructed.

Rear Gearcase Fluid Level Check:

The fill plug is located on the right side of the rear gearcase. Maintain the fluid level even with the bottom threads of the fill plug hole.

1. Position the vehicle on a level surface.
2. Remove the fill plug and check the fluid level.



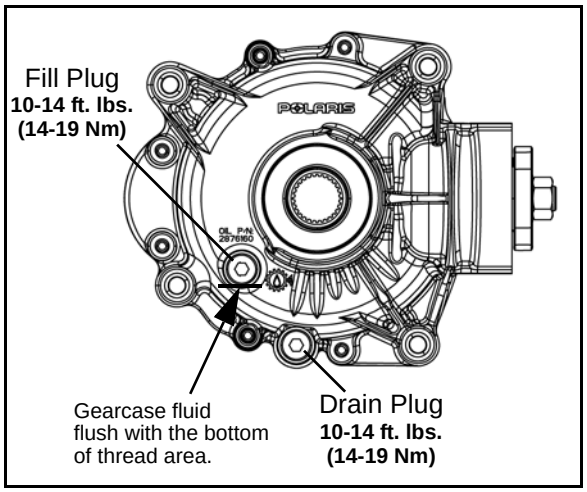
3. If fluid level is not even with the bottom threads, add the recommended fluid as needed. Do not overfill.
4. Reinstall fill plug and torque to specification.

= T
Drain / Fill Plug Torque: **10-14 ft. lbs. (14-19 Nm)**

Rear Gearcase Fluid Change:

The drain plug is located on the bottom right-hand side of the rear gearcase. Access the drain plug from the rear right-hand side of the ATV.

1. Remove the fill plug (refer to "Rear Gearcase Fluid Level Check").
2. Place a drain pan under the rear gearcase drain plug.
3. Remove the drain plug and allow the fluid to drain completely.



4. Clean the drain plug magnetic surface.
5. Reinstall drain plug with a new O-ring and torque to specification.
6. Add the recommended amount of fluid through the fill hole. Maintain the fluid level even with the bottom threads of the fill plug hole.

=
Recommended Rear Gearcase Lubricant: ATV Angle Drive Fluid (PN 2876160) **XP / TOURING Capacity:** 7.1 oz. (210 ml) **X2 Differential Capacity:** 6.1 oz. (180 ml)

7. Reinstall fill plug with a new O-ring and torque to specification.

= T
Drain / Fill Plug Torque: **10-14 ft. lbs. (14-19 Nm)**

8. Check for leaks. Dispose of used fluid properly.

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COOLING SYSTEM

Cooling System Overview

The engine coolant level is controlled, or maintained, by the recovery system. The recovery system components are the recovery bottle, radiator filler neck, radiator pressure cap and connecting hose.

As coolant operating temperature increases, the expanding (heated) excess coolant is forced out of the radiator past the pressure cap and into the recovery bottle. As engine coolant temperature decreases the contracting (cooled) coolant is drawn back up from the bottle, past the pressure cap, and into the radiator.

NOTE: Some coolant level drop on new vehicles is normal as the system is purging itself of trapped air. Observe coolant level often during the break-in period.

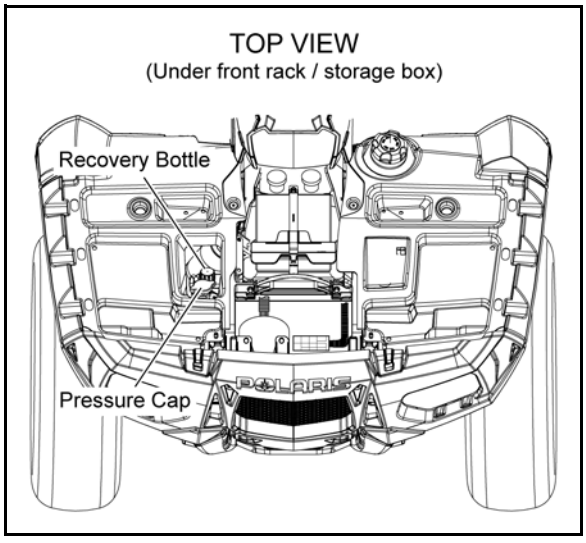
CAUTION
Overheating of engine could occur if air is not fully purged from system.

Polaris recommends the use of Polaris Premium 60/40 anti-freeze/coolant or a 50/50 mixture of high quality aluminum compatible anti-freeze/coolant and distilled water.

NOTE: Polaris Premium 60/40 is already premixed and ready to use. Do not dilute with water.

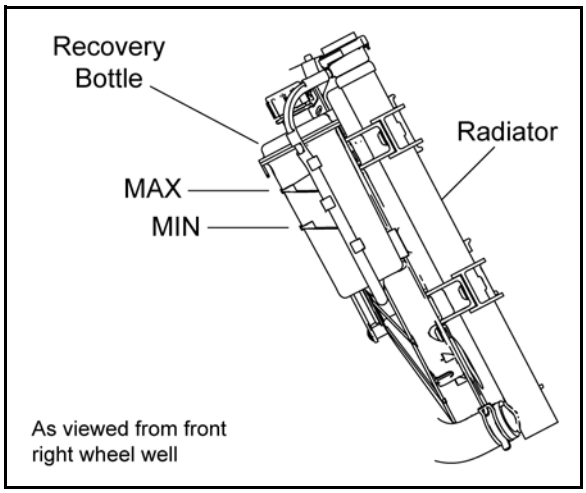
Coolant Level Inspection

The pressure cap and recovery bottle are located underneath the front rack as shown below. Maintain the coolant level between the "MIN" and "MAX" levels indicated on the recovery bottle.



With the engine at operating temperature, the coolant level should be between the MAX and MIN marks on the coolant recovery bottle. If not, perform the following procedure.

1. Position the vehicle on a level surface.
2. View the coolant level in the recovery bottle. The coolant level can be viewed from inside the front right wheel well.



3. If the coolant level is below the "MIN" line on the bottle, remove the front rack assembly to access the radiator pressure cap and recovery bottle cap.

NOTE: If overheating is evident, allow system to cool completely and check coolant level in the radiator and inspect for signs of trapped air in system.

⚠ WARNING
Never remove the pressure cap when the engine is warm or hot. Escaping steam can cause severe burns. The engine must be cool before removing the pressure cap.

4. Remove the pressure cap. Using a funnel, add coolant to the top of the radiator filler neck.
5. Reinstall the pressure cap.

NOTE: Use of a non-standard pressure cap will not allow the recovery system to function properly.

6. Remove recovery bottle cap and add coolant using a funnel.
7. Fill recovery bottle to "MAX" level with Polaris Premium 60/40 Anti-Freeze/Coolant or a 50/50 mixture of anti-freeze/coolant and distilled water as required for freeze protection in your area.
8. Reinstall the recovery bottle cap.

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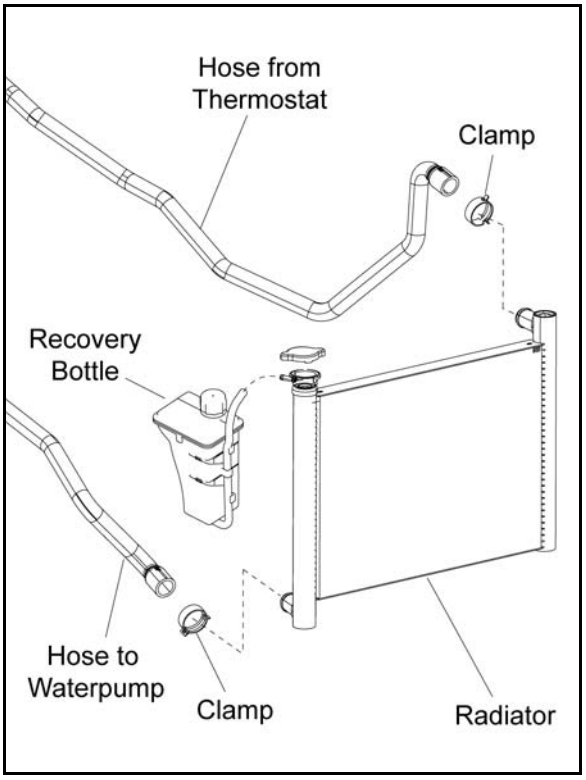
9. If coolant was required, start engine and check for leaks. Make sure radiator fins are clean to prevent overheating.

10. Add coolant as needed. Maintain the coolant level between the “MIN” and “MAX” marks on the bottle.

11. Reinstall the front rack assembly.

Cooling System Hoses

1. Inspect all hoses for cracks, deterioration, abrasion or leaks. Replace if necessary.



2. Check tightness of all hose clamps.

⚠ CAUTION

Do not over-tighten hose clamps at radiator, or radiator fitting may distort, causing a restriction to coolant flow. Radiator hose clamp torque is 36 in. lbs. (4 Nm).

Coolant Strength / Type

Test the strength of the coolant using an antifreeze hydrometer.

Antifreeze Hydrometer

- A 50/50 or 60/40 mixture of antifreeze and distilled water will provide the optimum cooling, corrosion protection, and antifreeze protection.
- Do not use tap water, straight antifreeze, or straight water in the system. Tap water contains minerals and impurities which build up in the system.
- Straight water or antifreeze may cause the system to freeze, corrode, or overheat.

Recommended Anti-Freeze/Coolant:
Polaris 60/40 Anti-Freeze/Coolant
(PN 2871534) (Quart)

NOTE: For further information on the engine cooling system, refer to Chapter 4.

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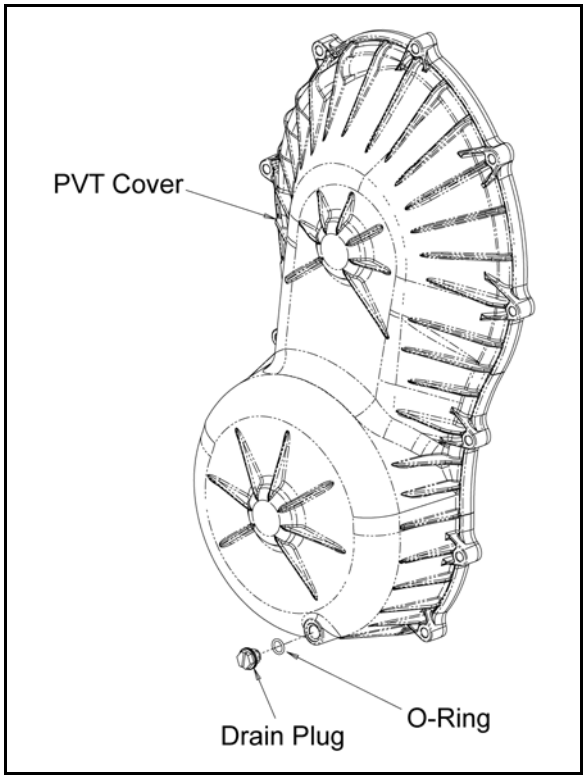
PVT / FINAL DRIVE / WHEEL AND TIRE

PVT Drying

NOTE: If operating the ATV through water, be sure to check the PVT system components for water ingestion. After operating in water, the ATV should be checked immediately.

1. Access the PVT drain plug on the bottom of the PVT cover using a long flat blade screwdriver between the frame and left-hand lower control arm from the rear of the ATV.
2. Remove the PVT drain plug and O-ring.



3. Allow the water to drain out completely.
4. Reinstall the drain plug and O-ring.
5. Start the engine and shift into park.
6. Apply varying throttle for 10-15 seconds to expel the moisture and air-dry the belt and clutches.

NOTE: Do not hold the throttle wide open for more than 5 seconds.

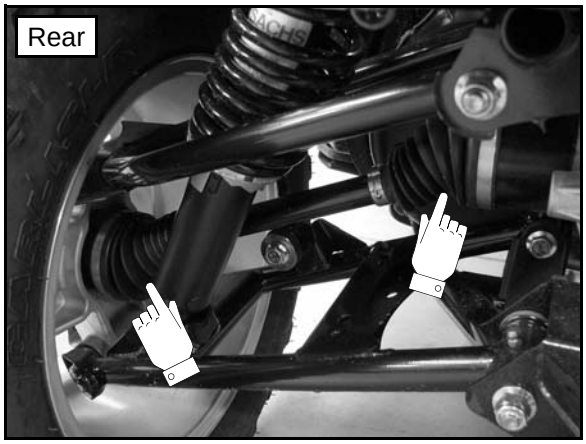
7. Allow the engine RPM to return to idle, then shift into low gear.
8. Test the PVT system for belt slippage. If the belt slips, repeat the process.

Drive Belt Removal

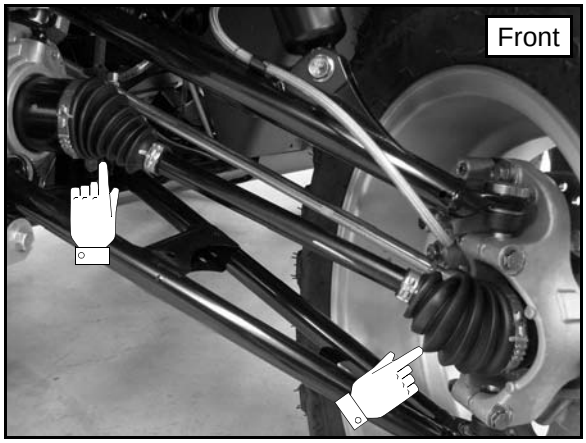
Refer to Chapter 7 "Clutching (PVT)" for drive belt removal procedures.

Drive Shaft Boot Inspection

Inspect the front and rear drive shaft boots for damage, tears, wear, or leaking grease. If the rubber boots exhibit any of these symptoms, replace the boot(s). Refer to Chapter 8 for drive shaft boot replacement.



NOTE: Remove the CV boot shield from the front lower A-arms to inspect both front CV boots.



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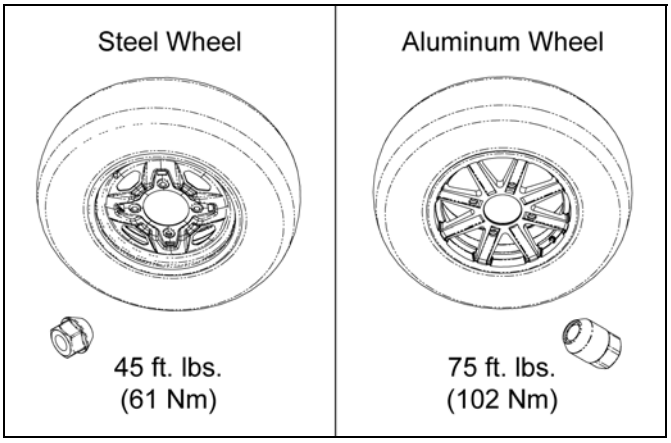
Wheel and Hub Torque Table

Item	Nut Type	Specification
Aluminum Wheels	Tapered Nut (Long)	75 ft. lbs. (102 Nm)
Steel Wheels	Tapered Nut (Short)	45 ft. lbs. (61 Nm)
Hub Retaining Nuts (Front & Rear)	-	80 ft. lbs. (108 Nm)



Wheel Removal

1. Position the vehicle on a level surface.
2. Stop the engine, place the transmission in PARK and lock the parking brake.
3. Loosen the wheel nuts slightly. If wheel hub removal is required, remove the cotter key and loosen the hub nut slightly.
4. Elevate the appropriate side of the vehicle by placing a suitable stand under the footrest frame.
5. Remove the wheel nuts and remove the wheel.
6. If hub removal is required, remove the hub nut and washers.

Wheel Installation

1. Verify the transmission is still in PARK and the parking brake is locked.
2. Install the wheel hub, washers, and hub nut, if previously removed.
3. Place the wheel in the correct position on the wheel hub. Be sure the valve stem is toward the outside and rotation arrows on the tire point toward forward rotation.
4. Install the wheel nuts and finger tighten them to align the center of the wheel holes with the center of the tapered nuts.

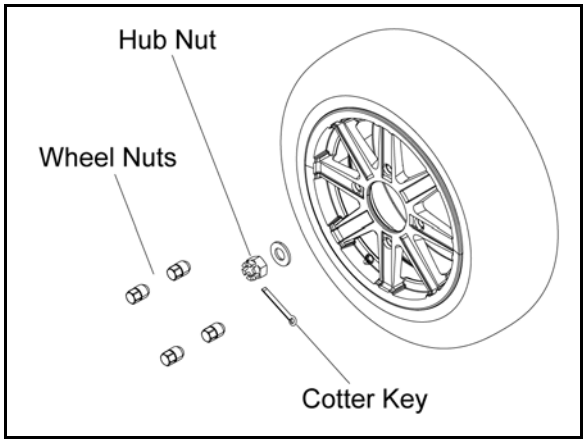
IMPORTANT: It is possible to torque the wheel nut on a steel rim without the nut being centered in the hole. Be sure to center the wheel nuts before applying torque to prevent wheel nuts from coming loose.

5. Carefully lower the vehicle to the ground.
6. Torque the wheel nuts and/or hub nut to the proper torque specification listed in the “Wheel and Hub Torque Table”.

⚠ CAUTION

Improperly installed wheels could affect vehicle handling and tire wear. On vehicles with tapered rear wheel nuts, make sure tapered end of nut goes into taper on wheel. Be sure to properly torque and install all wheel nuts.

7. If the hub nut was removed, install a new cotter pin after the hub nut has been tightened.



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Tire Pressure

Tire Pressure Inspection (PSI - Cold)	
Front	**Rear**
7 psi (48 kPa)	**5 psi (34.5 kPa)**

Tire Inspection

⚠ WARNING

Operating an ATV with worn tires will increase the possibility of the vehicle skidding and possible loss of control.

Worn tires can cause an accident.

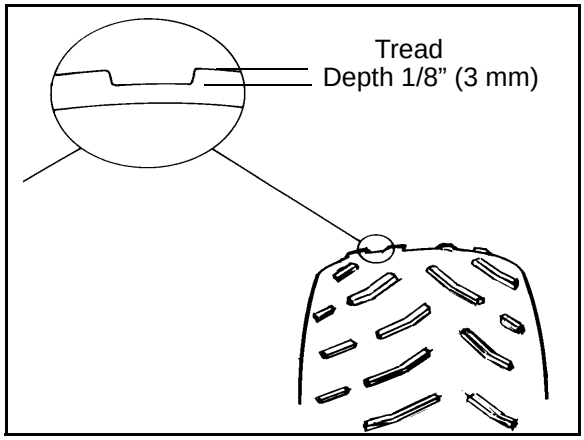
Always replace tires when the tread depth measures 1/8” (.3 cm) or less.

⚠ CAUTION

Maintain proper tire pressure.
Refer to the warning tire pressure decal applied to the vehicle.
Improper tire inflation may affect ATV maneuverability.
When replacing a tire always use original equipment size and type.
The use of non-standard size or type tires may affect ATV handling.

Tire Tread Depth

Always replace tires when tread depth is worn to 1/8” (3 mm) or less.



ELECTRICAL AND IGNITION SYSTEM

Battery Maintenance

Keep battery terminals and connections free of corrosion. If cleaning is necessary, remove the corrosion with a stiff wire brush. Wash with a solution of one tablespoon baking soda and one cup water. Rinse well with tap water and dry off with clean shop towels. Coat the terminals with dielectric grease or petroleum jelly.

⚠ WARNING

CALIFORNIA PROPOSITION 65 WARNING:
Batteries, battery posts, terminals and related accessories contain lead and lead compounds, and other chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. WASH HANDS AFTER HANDLING.

⚠ WARNING

Battery electrolyte is poisonous. It contains sulfuric acid. Serious burns can result from contact with skin, eyes or clothing. Antidote:

External: Flush with water.

Internal: Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg, or vegetable oil. Call physician immediately.

Eyes: Flush with water for 15 minutes and get prompt medical attention.

Batteries produce explosive gases. Keep sparks, flame, cigarettes, etc. away. Ventilate when charging or using in an enclosed space. Always shield eyes when working near batteries. KEEP OUT OF REACH OF CHILDREN.

IMPORTANT: Never attempt to open the battery. If the seal is broken, the battery will be ruined and will fail within a few weeks.

NOTE: If battery voltage is below 12.6V, fully charge the battery before putting into service. Refer to the “Charging Procedure” provided in Chapter 12 for more information.

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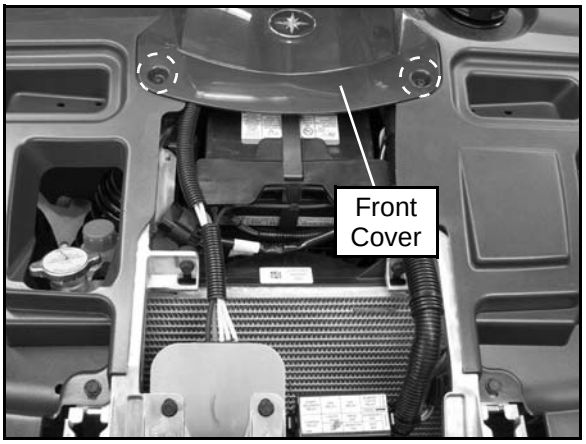
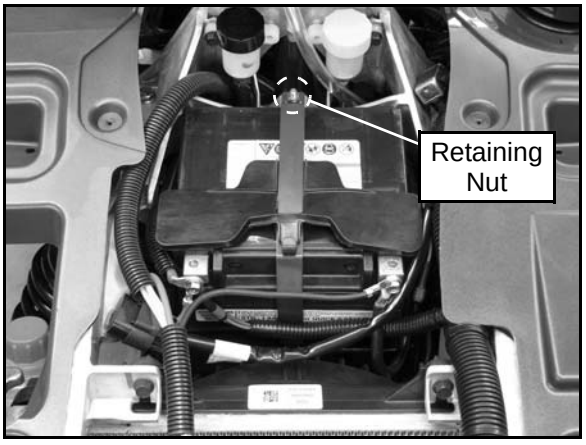
Battery Removal

1. Remove the front rack or storage box to access the battery.
2. Remove the (2) Torx screws retaining the front cover and remove the cover from the vehicle.



3. Remove the nut retaining the hold-down strap near the rear portion of the battery and remove the strap.



4. Disconnect the battery negative (-) (black) cables first, followed by the positive (+) (red) cables.

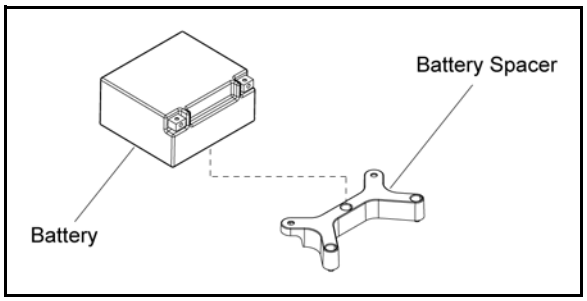
> **⚠ CAUTION**
>
> To reduce the chance of sparks: Whenever removing the battery, disconnect the negative (black) cables first.

5. Carefully lift the battery out of the ATV.

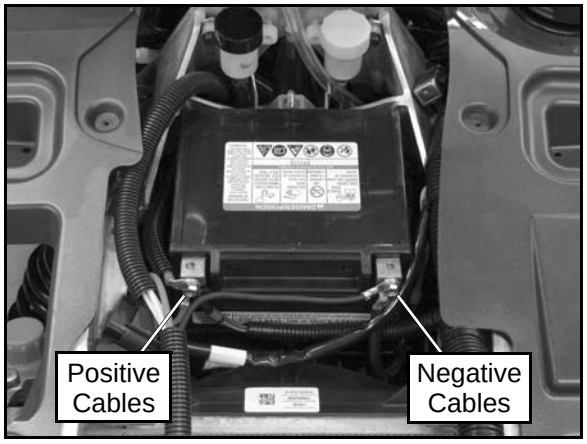
Battery Installation

IMPORTANT: Using a new battery that is not fully charged can damage the battery, resulting in a short battery life and can hinder performance. Charge battery before installation (see Chapter 12).

1. Position the battery spacer on the frame.



2. Place the battery into the ATV on its side with the positive (+) terminal towards the left side when facing the ATV as shown.



3. Coat the battery terminals and bolt threads with Dielectric Grease (PN 2871329) or petroleum jelly.
4. Connect and tighten the positive (+) (red) battery cables first, followed by the negative (-) (black) battery cables.

> **⚠ CAUTION**
>
> To reduce the chance of sparks: Whenever installing the battery, install the negative (black) cables last.

5. Install the hold-down strap, cover and retaining nut.
6. Verify cables are properly routed and fasteners are tight.
7. Reinstall the front rack or storage box.

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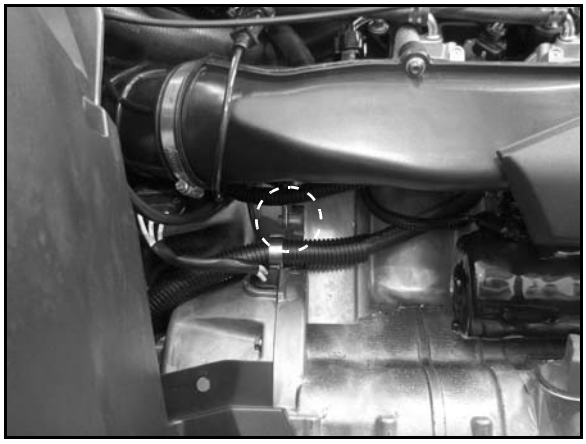
Engine / Chassis Ground

Periodically inspect the electrical ground cable attachments. Cables and connections should be tight and corrosion-free.

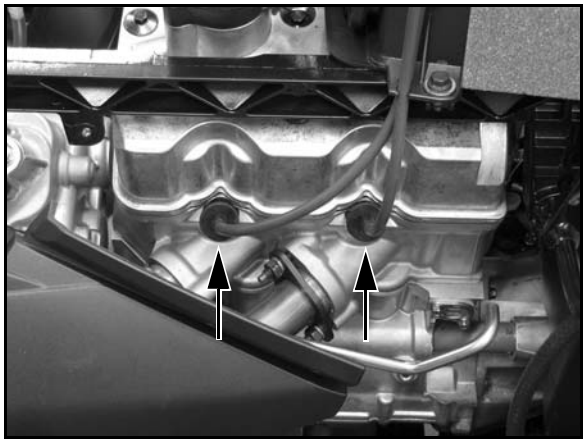
Inspect the battery-to-chassis connection underneath the front cab between the rack support and fuel fill hose. This connection allows the chassis to provide a ground path.

Inspect the chassis-to-engine connection on the front left side of the engine attached to the engine crankcase. This connection allows the engine to provide a ground path.



Spark Plug Service

1. Remove the seat and upper right-hand side panel.
2. Disconnect the shift linkage from the shift lever.
3. Remove the spark plug caps. Clean plug area so no dirt and debris can fall into engine when plugs are removed.

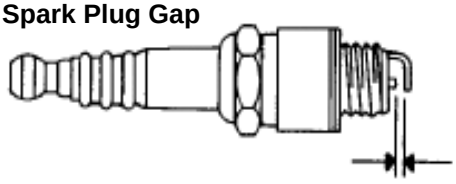


4. Using a 14 mm deep-well socket with an extension, remove the spark plug.

Spark Plug Inspection / Installation

1. Inspect electrodes for wear and carbon buildup. Look for a sharp outer edge with no rounding or erosion of the electrodes.
2. Clean with electrical contact cleaner or a glass bead spark plug cleaner only. **CAUTION:** A wire brush or coated abrasive should not be used.
3. Measure gap with a wire gauge. Refer to specifications in the following illustration for proper spark plug type and gap. Adjust gap if necessary by carefully bending the side electrode.

Spark Plug Gap



Gap - .035" (0.90 mm)

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4. If necessary, replace spark plug with proper type. **CAUTION:** Severe engine damage may occur if the incorrect spark plug is used.

Recommended Spark Plug

Champion REA8MCX

Spark Plug Torque:
18 ± 1.5 ft. lbs. (24 ± 2 Nm)

5. Apply a small amount of anti-seize compound to the spark plug threads.

6. Install spark plugs and torque to specification.

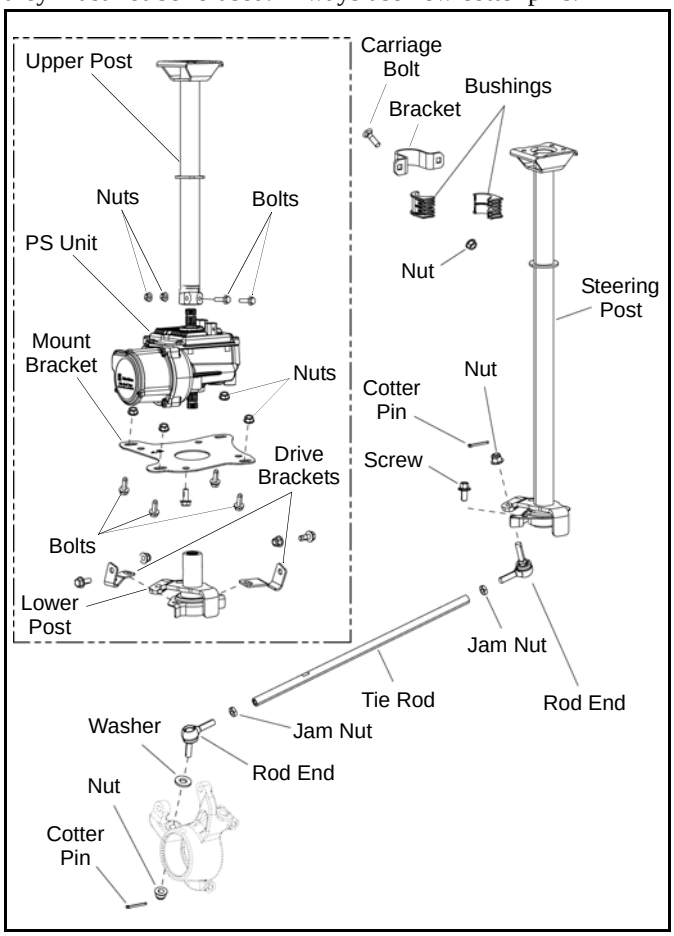
7. Make sure the high tension leads are retained by the airbox.

8. Reinstall the shift linkage, upper right-hand side panel, and seat.

STEERING

Steering Inspection

The steering components should be checked periodically for loose fasteners, worn tie rod ends, and damage. Also check to make sure all cotter pins are in place. If cotter pins are removed, they must not be re-used. Always use new cotter pins.



Replace any worn or damaged steering components. Steering should move freely through entire range of travel without binding. Check routing of all cables, hoses, and wiring to be sure the steering mechanism is not restricted or limited.

NOTE: Whenever steering components are replaced, check front end alignment. Use only genuine Polaris parts.

⚠ WARNING

Due to the critical nature of the procedures outlined in this chapter, Polaris recommends steering component repair and adjustment be performed by an authorized Polaris Dealer. Only a qualified technician should replace worn or damaged steering parts. Use only genuine Polaris replacement parts.

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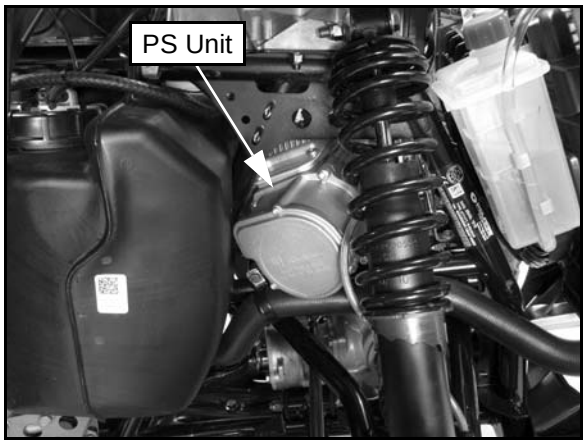
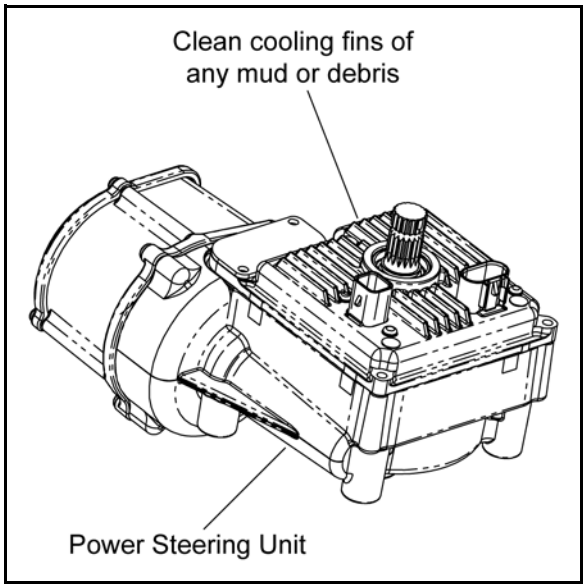
Power Steering Unit (EPS Models)

The power steering unit can be accessed through the front right wheel well by removing the mud guard.



Frequently clean the areas around and on top of the power steering unit to allow for proper cooling.

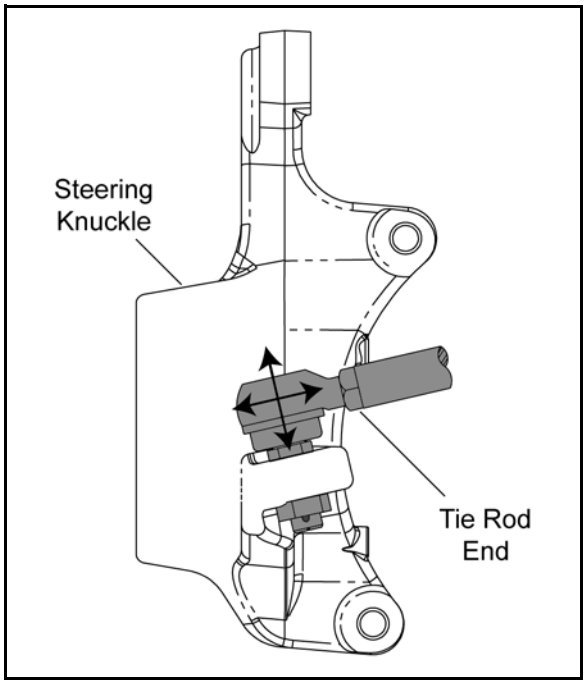


IMPORTANT: Be sure to clean these areas thoroughly after riding through muddy conditions.

Tie Rod End / Steering Inspection

To check for play in the tie rod end, grasp the steering tie rod, pull in all directions feeling for movement.

- Repeat inspection for inner tie rod end (on steering post).
- Replace any worn steering components. Steering should move freely through entire range of travel without binding.



- Elevate front end of machine so front wheels are off the ground. Check for any looseness in front hub / wheel assembly by grasping the tire firmly at top and bottom first, and then at front and rear. Try to move the wheel and hub by pushing inward and pulling outward.
- If abnormal movement is detected, inspect the hub and wheel assembly to determine the cause.

Toe Alignment

Use the following procedure to check the toe alignment of the vehicle. The recommended toe alignment is 0 - 1/8” (0 - 3 mm) toe out.

1. Position the vehicle on a smooth level surface.
2. Set handlebars in a straight ahead position and secure handlebars in this position.

NOTE: The steering post frog can be used as an indicator of whether the handlebars are straight. The frog should always point straight back from the steering post.

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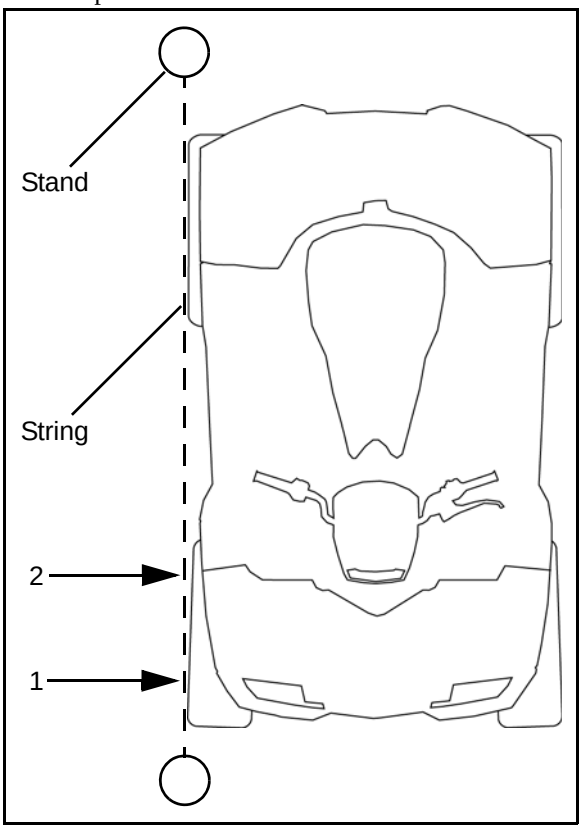
3. Tie a length of string between two stands as shown in the following illustration. Position the stands so the string is flush or parallel with the side of the rear tire.



NOTE: If available, you may use a long straight-edge instead of a string.

4. Measure the distance from the string to the rim at the front (1) and rear (2) of the front rim. The rear measurement should be 0 - 1/16” (0 - 1.5 mm) more than the front measurement on each side of the vehicle to obtain the recommended 0 - 1/8” (0 - 3 mm) toe out alignment.

5. Repeat the measurement procedure on the other side of the vehicle.

NOTE: If you discover improper alignment, refer to “Toe Alignment Adjustment” procedure.

= In. / mm.
Wheel Toe-out Alignment: 0 - 1/8” (0 - 3 mm)

Toe Alignment Adjustment

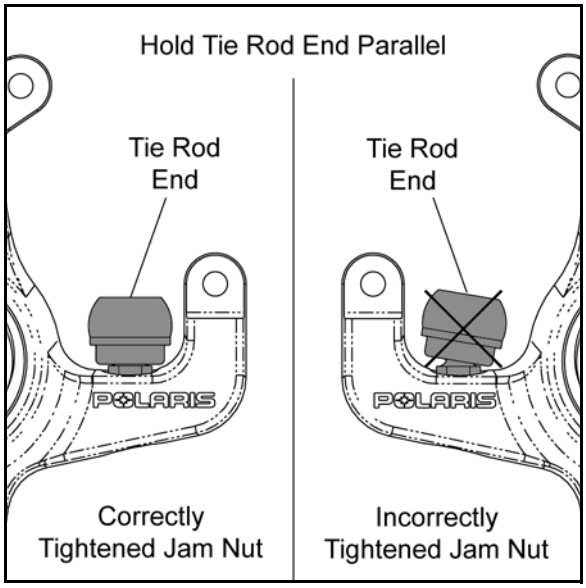
If toe alignment is incorrect, measure the distance between vehicle center and each wheel. This will tell you which tie rod needs adjusting.

NOTE: Be sure handlebars are straight ahead before determining which tie rod(s) need adjustment.

CAUTION
During tie rod adjustment, it is very important that the following precautions be taken when tightening tie rod end jam nuts. If the rod end is positioned incorrectly it will not pivot, and may break

To adjust toe alignment:

- Hold tie rod end to keep it from rotating.
- Loosen jam nuts at both ends of the tie rod.
- Shorten or lengthen the tie rod until alignment is as required to achieve the proper toe out setting.
- Important: When tightening the tie rod end jam nuts, the rod ends must be held parallel to prevent rod end damage and premature wear. Damage may not be immediately apparent if done incorrectly. See illustration.



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SUSPENSION

Suspension Inspection

Compress and release the suspension. Damping should be smooth throughout the range of travel.

- Check all suspension components and mounting fasteners for wear or damage.
- Inspect each shock body for leakage.

Suspension Spring Pre-Load Adjustment

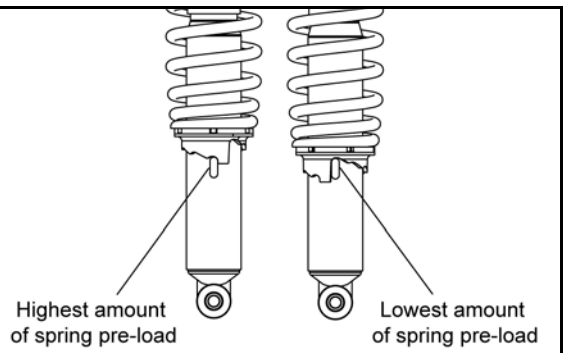
The front and rear shock absorber springs are adjustable. Rotate the adjuster cam either direction to increase or decrease spring tension. Always adjust both sides equally.

1. Elevate the front or rear of the vehicle to allow the suspension to fully extend.

> **⚠ CAUTION**
>
> Serious injury may result if machine tips or falls. Be sure machine is secure before adjusting.

NOTE: The tires should not be touching the ground.

2. To adjust the suspension, rotate the adjustment cam clockwise to increase spring tension or counter-clockwise to decrease spring tension.



Shock Pre-Load Adjustment

Operator weight and vehicle loading affect suspension spring pre-load requirements. Use Spanner Wrench (PN 2877408) to adjust pre-load as necessary to avoid bottoming of the shocks.

Shock Spanner Wrench

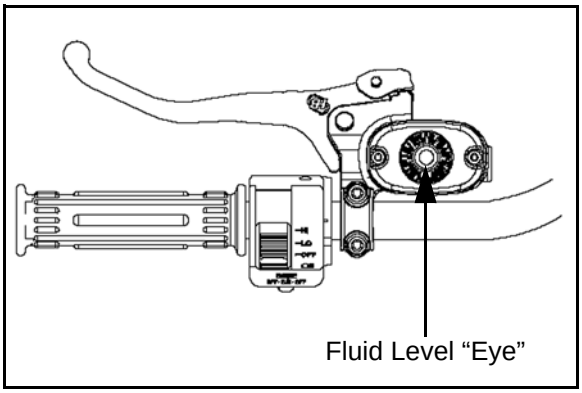
(PN 2877408)

BRAKE SYSTEM

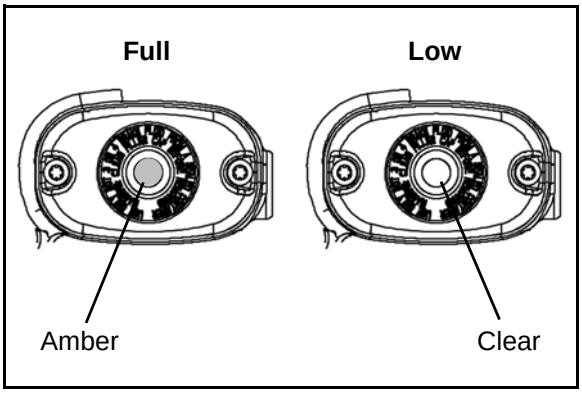
Brake Fluid Inspection

The following checks are recommended to keep the brake system in good operating condition. Service life of brake system components depends on operating conditions. Inspect brakes in accordance with the maintenance schedule and before each ride.

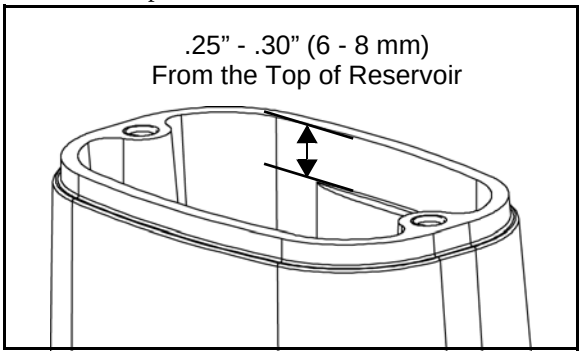
- Keep fluid level in the hand master cylinder reservoir to the indicated level inside reservoir.



- Check the fluid level “eye”. If it is clear, it is an indication that fluid is needed or the brake pads may be worn, which can reduce the fluid level.



- If required, add brake fluid to .25” - .30” (6 - 8 mm) from the top of the reservoir.



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- Check the fluid level of the auxiliary brake master cylinder reservoir. Add fluid to the indicated level.

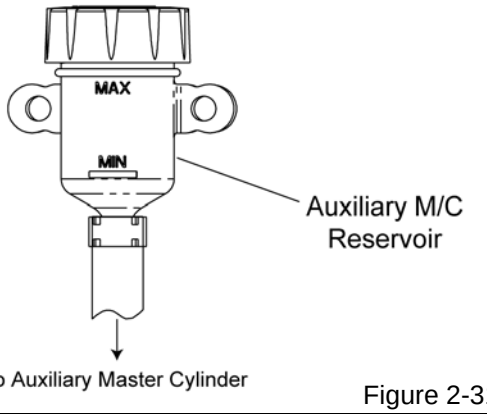


Figure 2-31

- Use Polaris DOT 4 Brake Fluid (PN 2872189).

⚠ CAUTION

DO NOT OVERFILL!
Excess brake fluid may cause brake drag.
Fill to the indicated fill line or specification.

- Check brake system for fluid leaks, excessive travel or spongy feel.
- Check brake pads for wear, damage or looseness.
- Check surface condition of the disc.
- Inspect thickness of brake pad friction material.

Brake Pad Inspection

Inspect brake pad friction material for excessive wear.

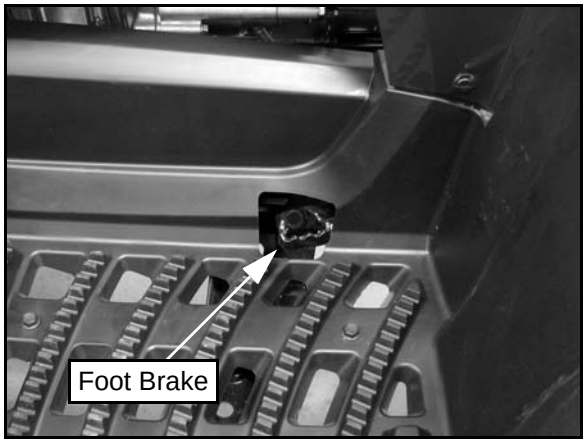
Brake Pad Inspection

Hose / Fitting Inspection

Check brake system hoses and fittings for cracks, deterioration, abrasion, and leaks. Tighten any loose fittings and replace any worn or damaged parts.

Auxiliary Brake Pedal

The hydraulic auxiliary brake system requires no adjustment. Frequently check the brake fluid level for the auxiliary brake system by viewing the level in the master cylinder reservoir located underneath the front rack assembly (see Figure 2-31).



- Check the effectiveness of the auxiliary brake by applying approximately 50 lbs. (23 kg) of downward force on the pedal.
- If brake pedal requires an excessive amount of travel to operate, inspect brake pads, pedal, linkage springs, rear master cylinder and hoses for wear, damage or leakage. Replace components as needed.

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MAINTENANCE LOG

Service Date	Hours / Miles (km)	Service Performed / Comments	Dealer / Technician
	20 Hours / 1 Month (Break-In)		

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NOTES

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